STIC Search Results Feedback Form

EIC17000

Questions about the scope or the results of the search? Contact *the EIC searcher or contact:*

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* [ ] *Example: 1713*
- *Relevant prior art* ***found****, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

- *Relevant prior art* ***not found:***
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

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DICTIONARY FILE UPDATES:  13 DEC 2007  HIGHEST RN 957969-84-5

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=> d his nofile

     (FILE 'HOME' ENTERED AT 14:27:59 ON 14 DEC 2007)

     FILE 'HCAPLUS' ENTERED AT 14:28:22 ON 14 DEC 2007
L1             1 SEA ABB=ON  PLU=ON  US2007042272/PN
                 SEL RN

     FILE 'REGISTRY' ENTERED AT 14:31:04 ON 14 DEC 2007
L2            43 SEA ABB=ON  PLU=ON  (10102-24-6/BI OR 10377-48-7/BI OR
                 10377-52-3/BI OR 12003-67-7/BI OR 12025-11-5/BI OR
                 12057-24-8/BI OR 12315-28-5/BI OR 12355-58-7/BI OR
                 13453-69-5/BI OR 13453-84-4/BI OR 554-13-2/BI OR
                 693781-19-0/BI OR 7440-06-4/BI OR 816415-83-5/BI OR
                 816415-84-6/BI OR 816415-85-7/BI OR 816416-34-9/BI OR
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                 816416-50-9/BI OR 816416-52-1/BI OR 816416-54-3/BI OR
                 816416-56-5/BI OR 816416-58-7/BI OR 816416-60-1/BI OR
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                 816416-74-7/BI OR 816416-76-9/BI OR 816416-78-1/BI OR
                 816416-80-5/BI OR 816416-83-8/BI OR 816416-84-9/BI OR
                 816416-86-1/BI OR 944251-30-3/BI)
                 D SCA
L3         22753 SEA ABB=ON  PLU=ON  (LI(L)(SI OR B OR GE OR AL OR C OR
                 GA OR S)(L)O(L)N)/ELS
                 SAV L3 TEMP LEW238/A
L4            28 SEA ABB=ON  PLU=ON  L3 AND L2
                 D SCA
L5           338 SEA ABB=ON  PLU=ON  L3 AND TIS/CI
L6            28 SEA ABB=ON  PLU=ON  L2 AND L5
L7           338 SEA ABB=ON  PLU=ON  L5 AND 0.6-5/LI
L8           327 SEA ABB=ON  PLU=ON  L7 AND 1-4/O
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L9          102 SEA ABB=ON  PLU=ON  L8 AND 0.01-0.5/N
L10          25 SEA ABB=ON  PLU=ON  L2 AND L9
L11           3 SEA ABB=ON  PLU=ON  L6 NOT L10
                D SCA

     FILE 'HCAPLUS' ENTERED AT 14:42:03 ON 14 DEC 2007
L12           6 SEA ABB=ON  PLU=ON  L10
L13          35 SEA ABB=ON  PLU=ON  L9
L14          35 SEA ABB=ON  PLU=ON  L12 OR L13
L15          26 SEA ABB=ON  PLU=ON  L14 AND (PY<=2004 OR PRY<=2004 OR
                AY<=2004)
L16           5 SEA ABB=ON  PLU=ON  L15 AND L12
L17          21 SEA ABB=ON  PLU=ON  L15 NOT L16


=> fil hcap
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FILE LAST UPDATED: 13 Dec 2007  (20071213/ED)

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 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> d l16 ibib abs hitstr hitind 1-5

L16  ANSWER 1 OF 5  HCAPLUS  COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:         2006:443057  HCAPLUS
DOCUMENT NUMBER:          144:436139
TITLE:                    Solid electrolyte lithium battery using lithium
                          phosphorus mixed oxide or lithium mixed
                          oxynitride electrolyte
INVENTOR(S):              Ukaji, Masaya; Mino, Shinji; Shibano, Yasuyuki;
                          Ito, Shuji
PATENT ASSIGNEE(S):       Matsushita Electric Industrial Co., Ltd., Japan
SOURCE:                   Jpn. Kokai Tokkyo Koho, 19 pp.
                          CODEN: JKXXAF
DOCUMENT TYPE:            Patent
LANGUAGE:                 Japanese
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.           KIND   DATE        APPLICATION NO.        DATE
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JP 2006120437 A 20060511 JP 2004-306650 200410 21

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PRIORITY APPLN. INFO.: JP 2004-306650 200410 21

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AB The disclosed battery has a Li ion-conductive solid electrolyte and amorphous SiO2 which is chemical bonded to the interfaces between the electrolyte and anode and/or cathode active mass, wherein the electrolyte is a compound represented by (1) LixPTyOz (T = Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zr, Nb, Mo, Ru, Ag, Ta, W, Pt and/or Au; x = 2.0-7.0; y = 0.01-1.0; z = 3.5-8.0) or (2) LixMOyNz [M = Si, B, Ge, Al, C, Ga and/or S; x = 0.6-1.0, y = 1.05-1.99, z = 0.01-0.5; x = 1.6-2.0, y = 2.05-2.99, z = 0.01-0.5; x = 1.6-2.0, y = 3.05-3.99, z = 0.01-0.5; or x = 4.6-5.0, y = 3.05-3.99, z = 0.01-0.5]. The solid electrolyte has high moisture resistance and ion conductivity, and the battery shows low internal resistance and long cycle life.

IT **816415-85-7**, Boron lithium nitride oxide (BLi0.8N0.3O1.45) **816416-34-9**, Germanium lithium nitride oxide (GeLi1.8N0.3O2.45) **816416-38-3**, Aluminum lithium nitride oxide (AlLi0.8N0.3O1.45) **816416-40-7**, Aluminum lithium nitride oxide (AlLi4.8N0.3O3.45) **816416-42-9**, Carbon lithium nitride oxide (CLi1.8N0.3O2.45) **816416-44-1**, Gallium lithium nitride oxide (GaLi0.8N0.3O1.45) **816416-46-3**, Lithium sulfur nitride oxide (Li1.8SN0.3O3.45) **816416-50-9**, Boron lithium nitride oxide silicate (B0.5Li2.3N0.3O0.45(SiO4)0.5) **816416-52-1**, Germanium lithium nitride oxide silicate (Ge0.5Li3.8N0.3O1.45(SiO4)0.5) **816416-54-3**, Carbon lithium nitride oxide silicate (C0.5Li2.8N0.3O2.95(SiO4)0.5) **816416-56-5**, Lithium silicon nitride oxide sulfate (Li2.8Si0.5N0.3O1.45(SO4)0.5) **816416-58-7**, Germanium lithium borate nitride oxide (Ge0.5Li2.3(BO3)0.5N0.3O0.95) **816416-60-1**, Aluminum lithium borate nitride oxide (Al0.5Li2.8(BO3)0.5N0.3O0.95) **816416-62-3**, Boron lithium carbonate nitride oxide (B0.5Li1.3(CO3)0.5N0.3O0.45) **816416-64-5**, Gallium lithium borate nitride oxide (Ga0.5Li0.8(BO2)0.5N0.3O0.45) **816416-66-7**, Boron lithium nitride oxide sulfate (B0.5Li1.3N0.3O0.45(SO4)0.5) **816416-68-9** **816416-70-3**, Germanium lithium nitride oxide sulfate (Ge0.5Li2.8N0.3O1.45(SO4)0.5) **816416-72-5**, Aluminum gallium lithium nitride oxide (Al0.5Ga0.5Li2.8N0.3O2.45) **816416-74-7**, Carbon lithium nitride oxide sulfate (C0.5Li1.8N0.3O0.95(SO4)0.5) **882682-64-6**, Lithium silicon nitride oxide (Li1.8SiN0.5O2.15) **884739-67-7**, Lithium silicon nitride oxide (Li1.8SiN0.3O2.45) **885096-04-8**, Lithium silicon nitride oxide (Li1.8SiN0.01O2.88) **885096-05-9**, Lithium silicon nitride oxide (Li1.8SiN0.1O2.75)
RL: DEV (Device component use)
(solid electrolyte Li battery with long cycle life using Li-P-transition metal mixed oxide or Li mixed oxynitride electrolyte)

RN 816415-85-7 HCAPLUS

CN Boron lithium nitride oxide (BLi0.8N0.3O1.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number

N	0.3	17778-88-0
O	1.45	17778-80-2
B	1	7440-42-8
Li	0.8	7439-93-2

RN 816416-34-9 HCAPLUS
CN Germanium lithium nitride oxide (GeLi1.8N0.3O2.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	2.45	17778-80-2
Ge	1	7440-56-4
Li	1.8	7439-93-2

RN 816416-38-3 HCAPLUS
CN Aluminum lithium nitride oxide (AlLi0.8N0.3O1.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
Li	0.8	7439-93-2
Al	1	7429-90-5

RN 816416-40-7 HCAPLUS
CN Aluminum lithium nitride oxide (AlLi4.8N0.3O3.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	3.45	17778-80-2
Li	4.8	7439-93-2
Al	1	7429-90-5

RN 816416-42-9 HCAPLUS
CN Carbon lithium nitride oxide (CLi1.8N0.3O2.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	2.45	17778-80-2
C	1	7440-44-0
Li	1.8	7439-93-2

RN 816416-44-1 HCAPLUS
CN Gallium lithium nitride oxide (GaLi0.8N0.3O1.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
Ga	1	7440-55-3
Li	0.8	7439-93-2

RN 816416-46-3 HCAPLUS
CN Lithium sulfur nitride oxide (Li1.8SN0.3O3.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	3.45	17778-80-2
S	1	7704-34-9
Li	1.8	7439-93-2

RN 816416-50-9 HCAPLUS
CN Boron lithium nitride oxide silicate (B0.5Li2.3N0.3O0.45(SiO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.45	17778-80-2
O4Si	0.5	17181-37-2
B	0.5	7440-42-8
Li	2.3	7439-93-2

RN 816416-52-1 HCAPLUS
CN Germanium lithium nitride oxide silicate (Ge0.5Li3.8N0.3O1.45(SiO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
O4Si	0.5	17181-37-2
Ge	0.5	7440-56-4
Li	3.8	7439-93-2

RN 816416-54-3 HCAPLUS
CN Carbon lithium nitride oxide silicate (C0.5Li2.8N0.3O2.95(SiO4)0.5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.95	17778-80-2
O4Si	0.5	17181-37-2
C	0.5	7440-44-0
Li	2.8	7439-93-2

RN 816416-56-5 HCAPLUS
CN Lithium silicon nitride oxide sulfate (Li2.8Si0.5N0.3O1.45(SO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2

O4S	0.5	14808-79-8
Si	0.5	7440-21-3
Li	2.8	7439-93-2

RN 816416-58-7 HCAPLUS
CN Germanium lithium borate nitride oxide (Ge0.5Li2.3(BO3)0.5N0.3O0.95) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.95	17778-80-2
BO3	0.5	14213-97-9
Ge	0.5	7440-56-4
Li	2.3	7439-93-2

RN 816416-60-1 HCAPLUS
CN Aluminum lithium borate nitride oxide (Al0.5Li2.8(BO3)0.5N0.3O0.95) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.95	17778-80-2
BO3	0.5	14213-97-9
Li	2.8	7439-93-2
Al	0.5	7429-90-5

RN 816416-62-3 HCAPLUS
CN Boron lithium carbonate nitride oxide (B0.5Li1.3(CO3)0.5N0.3O0.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.45	17778-80-2
B	0.5	7440-42-8
Li	1.3	7439-93-2
CO3	0.5	3812-32-6

RN 816416-64-5 HCAPLUS
CN Gallium lithium borate nitride oxide (Ga0.5Li0.8(BO2)0.5N0.3O0.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.45	17778-80-2
BO2	0.5	14100-65-3
Ga	0.5	7440-55-3
Li	0.8	7439-93-2

RN 816416-66-7 HCAPLUS
CN Boron lithium nitride oxide sulfate (B0.5Li1.3N0.3O0.45(SO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.45	17778-80-2
O4S	0.5	14808-79-8
B	0.5	7440-42-8
Li	1.3	7439-93-2

RN 816416-68-9 HCAPLUS
CN Germanium lithium carbonate nitride oxide (Ge0.5Li2.8(CO3)0.5N0.3O1.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
Ge	0.5	7440-56-4
Li	2.8	7439-93-2
CO3	0.5	3812-32-6

RN 816416-70-3 HCAPLUS
CN Germanium lithium nitride oxide sulfate (Ge0.5Li2.8N0.3O1.45(SO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
O4S	0.5	14808-79-8
Ge	0.5	7440-56-4
Li	2.8	7439-93-2

RN 816416-72-5 HCAPLUS
CN Aluminum gallium lithium nitride oxide (Al0.5Ga0.5Li2.8N0.3O2.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	2.45	17778-80-2
Ga	0.5	7440-55-3
Li	2.8	7439-93-2
Al	0.5	7429-90-5

RN 816416-74-7 HCAPLUS
CN Carbon lithium nitride oxide sulfate (C0.5Li1.8N0.3O0.95(SO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.95	17778-80-2
O4S	0.5	14808-79-8
C	0.5	7440-44-0
Li	1.8	7439-93-2

RN 882682-64-6 HCAPLUS
CN Lithium silicon nitride oxide (Li1.8SiN0.5O2.15) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.5	17778-88-0
O	2.15	17778-80-2
Si	1	7440-21-3
Li	1.8	7439-93-2

RN 884739-67-7 HCAPLUS
CN Lithium silicon nitride oxide (Li1.8SiN0.3O2.45) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	2.45	17778-80-2
Si	1	7440-21-3
Li	1.8	7439-93-2

RN 885096-04-8 HCAPLUS
CN Lithium silicon nitride oxide (Li1.8SiN0.01O2.88) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.01	17778-88-0
O	2.88	17778-80-2
Si	1	7440-21-3
Li	1.8	7439-93-2

RN 885096-05-9 HCAPLUS
CN Lithium silicon nitride oxide (Li1.8SiN0.1O2.75) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.1	17778-88-0
O	2.75	17778-80-2
Si	1	7440-21-3
Li	1.8	7439-93-2

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 76
IT 782495-23-2, Lithium titanium metaphosphate oxide (Li2.8Ti0.2(PO3)O0.9) 782495-24-3, Lithium vanadium metaphosphate oxide (Li2.8V0.2(PO3)O0.9) 782495-25-4, Chromium lithium metaphosphate oxide (Cr0.2Li2.8(PO3)O0.9) 782495-26-5, Lithium manganese metaphosphate oxide (Li2.8Mn0.2(PO3)O0.9) 782495-27-6, Iron lithium metaphosphate oxide (Fe0.2Li2.8(PO3)O0.9) 782495-28-7, Cobalt lithium metaphosphate oxide (Co0.2Li2.8(PO3)O0.9) 782495-29-8, Lithium nickel metaphosphate oxide (Li2.8Ni0.2(PO3)O0.9) 782495-30-1, Copper lithium

metaphosphate oxide (Cu0.2Li2.8(PO3)O0.9) 782495-31-2, Lithium zirconium metaphosphate oxide (Li2.8Zr0.2(PO3)O0.9) 782495-32-3, Lithium niobium metaphosphate oxide (Li2.8Nb0.2(PO3)O0.9) 782495-33-4, Lithium molybdenum metaphosphate oxide (Li2.8Mo0.2(PO3)O0.9) 782495-34-5, Lithium ruthenium metaphosphate oxide (Li2.8Ru0.2(PO3)O0.9) 782495-35-6, Lithium silver metaphosphate oxide (Li2.8Ag0.2(PO3)O0.9) 782495-36-7, Lithium tantalum metaphosphate oxide (Li2.8Ta0.2(PO3)O0.9) 782495-37-8, Lithium tungsten metaphosphate oxide (Li2.8W0.2(PO3)O0.9) 782495-38-9, Lithium platinum metaphosphate oxide (Li2.8Pt0.2(PO3)O0.9) 782495-39-0, Gold lithium metaphosphate oxide (Au0.2Li2.8(PO3)O0.9) 782495-41-4, Lithium tungsten metaphosphate oxide (Li2.8W0.01(PO3)O0.9) 782495-42-5, Lithium tungsten metaphosphate oxide (Li2.8W0.05(PO3)O0.9) 782495-43-6, Lithium tungsten metaphosphate oxide (Li2.8W0.1(PO3)O0.9) 782495-44-7, Lithium tungsten metaphosphate oxide (Li2.8W0.5(PO3)O0.9) 782495-47-0, Lithium vanadium oxide phosphate (Li2.8V0.2O0.4(PO4)) 782495-48-1, Chromium lithium oxide phosphate (Cr0.2Li2.8O0.2(PO4)) 782495-49-2, Lithium manganese oxide phosphate (Li2.8Mn0.2O0.3(PO4)) 782495-50-5, Iron lithium oxide phosphate (Fe0.2Li2.8O0.17(PO4)) 782495-51-6, Cobalt lithium oxide phosphate (Co0.2Li2.8O0.17(PO4)) 782495-52-7, Lithium nickel oxide phosphate (Li2.8Ni0.2O0.1(PO4)) 782495-53-8, Copper lithium oxide phosphate (Cu0.2Li2.8O0.1(PO4)) 782495-54-9, Lithium zirconium oxide phosphate (Li2.8Zr0.2O0.3(PO4)) 782495-55-0, Lithium niobium oxide phosphate (Li2.8Nb0.2O0.4(PO4)) 782495-56-1, Lithium molybdenum oxide phosphate (Li2.8Mo0.2O0.5(PO4)) 782495-57-2, Lithium silver phosphate (Li2.8Ag0.2(PO4)) 782495-58-3, Lithium tantalum oxide phosphate (Li2.8Ta0.2O0.4(PO4)) 782495-59-4, Lithium tungsten oxide phosphate (Li2.8W0.2O0.5(PO4)) 782495-60-7, Lithium titanium oxide phosphate (Li4Ti0.25O(PO4)) 782495-61-8, Lithium vanadium oxide phosphate (Li3.75V0.25O(PO4)) 782495-62-9, Chromium lithium oxide phosphate (Cr0.25Li3.5O(PO4)) 782495-63-0, Lithium manganese oxide phosphate (Li3.25Mn0.25O(PO4)) 782495-64-1, Lithium niobium oxide phosphate (Li3.75Nb0.25O(PO4)) 782495-65-2, Lithium molybdenum oxide phosphate (Li3.5Mo0.25O(PO4)) 782495-66-3, Lithium tantalum oxide phosphate (Li3.75Ta0.25O(PO4)) 782495-67-4, Lithium tungsten oxide phosphate (Li3.5W0.25O(PO4)) 782495-69-6, Lithium tungsten oxide phosphate (Li3.02W0.01O0.04(PO4)) 782495-70-9, Lithium tungsten oxide phosphate (Li3.2W0.1O0.4(PO4)) 782495-72-1, Lithium tungsten oxide phosphate (Li3.66W0.33O1.32(PO4)) 782495-74-3, Lithium tungsten oxide phosphate (Li5WO4(PO4)) **816415-85-7**, Boron lithium nitride oxide (BLi0.8N0.3O1.45) **816416-34-9**, Germanium lithium nitride oxide (GeLi1.8N0.3O2.45) **816416-38-3**, Aluminum lithium nitride oxide (AlLi0.8N0.3O1.45) **816416-40-7**, Aluminum lithium nitride oxide (AlLi4.8N0.3O3.45) **816416-42-9**, Carbon lithium nitride oxide (CLi1.8N0.3O2.45) **816416-44-1**, Gallium lithium nitride oxide (GaLi0.8N0.3O1.45) **816416-46-3**, Lithium sulfur nitride oxide (Li1.8SN0.3O3.45) **816416-50-9**, Boron lithium nitride oxide silicate (B0.5Li2.3N0.3O0.45(SiO4)0.5) **816416-52-1**, Germanium lithium nitride oxide silicate (Ge0.5Li3.8N0.3O1.45(SiO4)0.5) **816416-54-3**, Carbon lithium nitride oxide silicate (C0.5Li2.8N0.3O2.95(SiO4)0.5) **816416-56-5**, Lithium silicon nitride oxide sulfate (Li2.8Si0.5N0.3O1.45(SO4)0.5) **816416-58-7**, Germanium lithium borate nitride oxide (Ge0.5Li2.3(BO3)0.5N0.3O0.95) **816416-60-1**, Aluminum lithium borate nitride oxide (Al0.5Li2.8(BO3)0.5N0.3O0.95) **816416-62-3**, Boron lithium

carbonate nitride oxide (B0.5Li1.3(CO3)0.5N0.3O0.45) **816416-64-5**, Gallium lithium borate nitride oxide (Ga0.5Li0.8(BO2)0.5N0.3O0.45) **816416-66-7**, Boron lithium nitride oxide sulfate (B0.5Li1.3N0.3O0.45(SO4)0.5) **816416-68-9** **816416-70-3**, Germanium lithium nitride oxide sulfate (Ge0.5Li2.8N0.3O1.45(SO4)0.5) **816416-72-5**, Aluminum gallium lithium nitride oxide (Al0.5Ga0.5Li2.8N0.3O2.45) **816416-74-7**, Carbon lithium nitride oxide sulfate (C0.5Li1.8N0.3O0.95(SO4)0.5) 882681-95-0, Lithium titanium oxide phosphate (Li2.8Ti0.2O0.3(PO4)) 882682-19-1, Lithium zirconium oxide phosphate (Li4Zr0.25O(PO4)) **882682-64-6**, Lithium silicon nitride oxide (Li1.8SiN0.5O2.15) **884739-67-7**, Lithium silicon nitride oxide (Li1.8SiN0.3O2.45) **885096-04-8**, Lithium silicon nitride oxide (Li1.8SiN0.01O2.88) **885096-05-9**, Lithium silicon nitride oxide (Li1.8SiN0.1O2.75)
RL: DEV (Device component use)
(solid electrolyte Li battery with long cycle life using Li-P-transition metal mixed oxide or Li mixed oxynitride electrolyte)

L16 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:443021 HCAPLUS
DOCUMENT NUMBER: 144:436133
TITLE: Lithium secondary batteries having wet-stable oxide or nitride-based ionic conductors and their anodes
INVENTOR(S): Ukaji, Masaya; Mino, Shinji; Shibano, Yasuyuki; Ito, Shuji
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006120337	A	20060511	JP 2004-304089	20041019

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PRIORITY APPLN. INFO.: JP 2004-304089 20041019

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AB The anodes consist of Li-precipitating conductive substrates and Li ion-conductive layers represented by Lx1PTy1Oz1 or Lx2MOy2Nz2 [T = Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zr, Nb, Mo, Ru, Ag, Ta, W, Pt, and/or Au; 2.0 ≤ x1 ≤ 7.0; 0.01 ≤ y1 ≤ 1.0; 3.5 ≤ z1 ≤ 8.0; M = Si, B, Ge, Al, C, Ga, and/or S; plural range sets of (x2, y2, z2) are given] and being formed on the substrate surface. Lithium secondary batteries employing the anodes suppress rise in anode impedance and show long cycle life.

IT **816415-85-7P**, Boron lithium nitride oxide (BLi0.8N0.3O1.45) **816416-34-9P**, Germanium lithium nitride oxide (GeLi1.8N0.3O2.45) **816416-38-3P**, Aluminum lithium nitride oxide (AlLi0.8N0.3O1.45) **816416-40-7P**, Aluminum lithium

nitride oxide (AlLi4.8N0.3O3.45) **816416-44-1P**, Gallium lithium nitride oxide (GaLi0.8N0.3O1.45) **816416-46-3P**, Lithium sulfur nitride oxide (Li1.8SN0.3O3.45) **816416-50-9P**, Boron lithium nitride oxide silicate (B0.5Li2.3N0.3O0.45(SiO4)0.5) **816416-52-1P**, Germanium lithium nitride oxide silicate (Ge0.5Li3.8N0.3O1.45(SiO4)0.5) **816416-54-3P**, Carbon lithium nitride oxide silicate (C0.5Li2.8N0.3O2.95(SiO4)0.5) **816416-56-5P**, Lithium silicon nitride oxide sulfate (Li2.8Si0.5N0.3O1.45(SO4)0.5) **816416-58-7P**, Germanium lithium borate nitride oxide (Ge0.5Li2.3(BO3)0.5N0.3O0.95) **816416-60-1P**, Aluminum lithium borate nitride oxide (Al0.5Li2.8(BO3)0.5N0.3O0.95) **816416-62-3P**, Boron lithium carbonate nitride oxide (B0.5Li1.3(CO3)0.5N0.3O0.45) **816416-64-5P**, Gallium lithium borate nitride oxide (Ga0.5Li0.8(BO2)0.5N0.3O0.45) **816416-66-7P**, Boron lithium nitride oxide sulfate (B0.5Li1.3N0.3O0.45(SO4)0.5) **816416-68-9P** **816416-70-3P**, Germanium lithium nitride oxide sulfate (Ge0.5Li2.8N0.3O1.45(SO4)0.5) **816416-72-5P**, Aluminum gallium lithium nitride oxide (Al0.5Ga0.5Li2.8N0.3O2.45) **816416-74-7P**, Carbon lithium nitride oxide sulfate (C0.5Li1.8N0.3O0.95(SO4)0.5) **882682-64-6P**, Lithium silicon nitride oxide (Li1.8SiN0.5O2.15) **884739-67-7P**, Lithium silicon nitride oxide (Li1.8SiN0.3O2.45) **885122-24-7P**, Aluminum lithium nitride oxide (AlLi1.8N0.3O2.45)
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation)
(anodes; manufacture of lithium secondary batteries having wet-stable oxide or nitride-based ionic conductors)

RN 816415-85-7 HCAPLUS
CN Boron lithium nitride oxide (BLi0.8N0.3O1.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
B	1	7440-42-8
Li	0.8	7439-93-2

RN 816416-34-9 HCAPLUS
CN Germanium lithium nitride oxide (GeLi1.8N0.3O2.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	2.45	17778-80-2
Ge	1	7440-56-4
Li	1.8	7439-93-2

RN 816416-38-3 HCAPLUS
CN Aluminum lithium nitride oxide (AlLi0.8N0.3O1.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
Li	0.8	7439-93-2

Al	1	7429-90-5

RN 816416-40-7 HCAPLUS
CN Aluminum lithium nitride oxide (AlLi4.8N0.3O3.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	3.45	17778-80-2
Li	4.8	7439-93-2
Al	1	7429-90-5

RN 816416-44-1 HCAPLUS
CN Gallium lithium nitride oxide (GaLi0.8N0.3O1.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
Ga	1	7440-55-3
Li	0.8	7439-93-2

RN 816416-46-3 HCAPLUS
CN Lithium sulfur nitride oxide (Li1.8SN0.3O3.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	3.45	17778-80-2
S	1	7704-34-9
Li	1.8	7439-93-2

RN 816416-50-9 HCAPLUS
CN Boron lithium nitride oxide silicate (B0.5Li2.3N0.3O0.45(SiO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.45	17778-80-2
O4Si	0.5	17181-37-2
B	0.5	7440-42-8
Li	2.3	7439-93-2

RN 816416-52-1 HCAPLUS
CN Germanium lithium nitride oxide silicate (Ge0.5Li3.8N0.3O1.45(SiO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
O4Si	0.5	17181-37-2
Ge	0.5	7440-56-4
Li	3.8	7439-93-2

RN 816416-54-3 HCAPLUS
CN Carbon lithium nitride oxide silicate (C0.5Li2.8N0.3O2.95(SiO4)0.5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.95	17778-80-2
O4Si	0.5	17181-37-2
C	0.5	7440-44-0
Li	2.8	7439-93-2

RN 816416-56-5 HCAPLUS
CN Lithium silicon nitride oxide sulfate (Li2.8Si0.5N0.3O1.45(SO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
O4S	0.5	14808-79-8
Si	0.5	7440-21-3
Li	2.8	7439-93-2

RN 816416-58-7 HCAPLUS
CN Germanium lithium borate nitride oxide (Ge0.5Li2.3(BO3)0.5N0.3O0.95) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.95	17778-80-2
BO3	0.5	14213-97-9
Ge	0.5	7440-56-4
Li	2.3	7439-93-2

RN 816416-60-1 HCAPLUS
CN Aluminum lithium borate nitride oxide (Al0.5Li2.8(BO3)0.5N0.3O0.95) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.95	17778-80-2
BO3	0.5	14213-97-9
Li	2.8	7439-93-2
Al	0.5	7429-90-5

RN 816416-62-3 HCAPLUS
CN Boron lithium carbonate nitride oxide (B0.5Li1.3(CO3)0.5N0.3O0.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number

N	0.3	17778-88-0
O	0.45	17778-80-2
B	0.5	7440-42-8
Li	1.3	7439-93-2
CO3	0.5	3812-32-6

RN 816416-64-5 HCAPLUS
CN Gallium lithium borate nitride oxide (Ga0.5Li0.8(BO2)0.5N0.3O0.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.45	17778-80-2
BO2	0.5	14100-65-3
Ga	0.5	7440-55-3
Li	0.8	7439-93-2

RN 816416-66-7 HCAPLUS
CN Boron lithium nitride oxide sulfate (B0.5Li1.3N0.3O0.45(SO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.45	17778-80-2
O4S	0.5	14808-79-8
B	0.5	7440-42-8
Li	1.3	7439-93-2

RN 816416-68-9 HCAPLUS
CN Germanium lithium carbonate nitride oxide (Ge0.5Li2.8(CO3)0.5N0.3O1.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
Ge	0.5	7440-56-4
Li	2.8	7439-93-2
CO3	0.5	3812-32-6

RN 816416-70-3 HCAPLUS
CN Germanium lithium nitride oxide sulfate (Ge0.5Li2.8N0.3O1.45(SO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
O4S	0.5	14808-79-8
Ge	0.5	7440-56-4
Li	2.8	7439-93-2

RN 816416-72-5 HCAPLUS
CN Aluminum gallium lithium nitride oxide (Al0.5Ga0.5Li2.8N0.3O2.45)

(CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	2.45	17778-80-2
Ga	0.5	7440-55-3
Li	2.8	7439-93-2
Al	0.5	7429-90-5

RN 816416-74-7 HCAPLUS
CN Carbon lithium nitride oxide sulfate (C0.5Li1.8N0.3O0.95(SO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.95	17778-80-2
O4S	0.5	14808-79-8
C	0.5	7440-44-0
Li	1.8	7439-93-2

RN 882682-64-6 HCAPLUS
CN Lithium silicon nitride oxide (Li1.8SiN0.5O2.15) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.5	17778-88-0
O	2.15	17778-80-2
Si	1	7440-21-3
Li	1.8	7439-93-2

RN 884739-67-7 HCAPLUS
CN Lithium silicon nitride oxide (Li1.8SiN0.3O2.45) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	2.45	17778-80-2
Si	1	7440-21-3
Li	1.8	7439-93-2

RN 885122-24-7 HCAPLUS
CN Aluminum lithium nitride oxide (AlLi1.8N0.3O2.45) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	2.45	17778-80-2
Li	1.8	7439-93-2
Al	1	7429-90-5

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
IT 782495-23-2P, Lithium titanium metaphosphate oxide (Li2.8Ti0.2(PO3)O0.9) 782495-24-3P, Lithium vanadium metaphosphate oxide (Li2.8V0.2(PO3)O0.9) 782495-25-4P, Chromium lithium metaphosphate oxide (Cr0.2Li2.8(PO3)O0.9) 782495-26-5P, Lithium manganese metaphosphate oxide (Li2.8Mn0.2(PO3)O0.9) 782495-27-6P, Iron lithium metaphosphate oxide (Fe0.2Li2.8(PO3)O0.9) 782495-28-7P, Cobalt lithium metaphosphate oxide (Co0.2Li2.8(PO3)O0.9) 782495-29-8P, Lithium nickel metaphosphate oxide (Li2.8Ni0.2(PO3)O0.9) 782495-30-1P, Copper lithium metaphosphate oxide (Cu0.2Li2.8(PO3)O0.9) 782495-31-2P, Lithium zirconium metaphosphate oxide (Li2.8Zr0.2(PO3)O0.9) 782495-32-3P, Lithium niobium metaphosphate oxide (Li2.8Nb0.2(PO3)O0.9) 782495-33-4P, Lithium molybdenum metaphosphate oxide (Li2.8Mo0.2(PO3)O0.9) 782495-34-5P, Lithium ruthenium metaphosphate oxide (Li2.8Ru0.2(PO3)O0.9) 782495-35-6P, Lithium silver metaphosphate oxide (Li2.8Ag0.2(PO3)O0.9) 782495-36-7P, Lithium tantalum metaphosphate oxide (Li2.8Ta0.2(PO3)O0.9) 782495-37-8P, Lithium tungsten metaphosphate oxide (Li2.8W0.2(PO3)O0.9) 782495-38-9P, Lithium platinum metaphosphate oxide (Li2.8Pt0.2(PO3)O0.9) 782495-39-0P, Gold lithium metaphosphate oxide (Au0.2Li2.8(PO3)O0.9) 782495-41-4P, Lithium tungsten metaphosphate oxide (Li2.8W0.01(PO3)O0.9) 782495-42-5P, Lithium tungsten metaphosphate oxide (Li2.8W0.05(PO3)O0.9) 782495-43-6P, Lithium tungsten metaphosphate oxide (Li2.8W0.1(PO3)O0.9) 782495-44-7P, Lithium tungsten metaphosphate oxide (Li2.8W0.5(PO3)O0.9) 782495-47-0P, Lithium vanadium oxide phosphate (Li2.8V0.2O0.4(PO4)) 782495-48-1P, Chromium lithium oxide phosphate (Cr0.2Li2.8O0.2(PO4)) 782495-49-2P, Lithium manganese oxide phosphate (Li2.8Mn0.2O0.3(PO4)) 782495-50-5P, Iron lithium oxide phosphate (Fe0.2Li2.8O0.17(PO4)) 782495-51-6P, Cobalt lithium oxide phosphate (Co0.2Li2.8O0.17(PO4)) 782495-52-7P, Lithium nickel oxide phosphate (Li2.8Ni0.2O0.1(PO4)) 782495-53-8P, Copper lithium oxide phosphate (Cu0.2Li2.8O0.1(PO4)) 782495-54-9P, Lithium zirconium oxide phosphate (Li2.8Zr0.2O0.3(PO4)) 782495-55-0P, Lithium niobium oxide phosphate (Li2.8Nb0.2O0.4(PO4)) 782495-56-1P, Lithium molybdenum oxide phosphate (Li2.8Mo0.2O0.5(PO4)) 782495-57-2P, Lithium silver phosphate (Li2.8Ag0.2(PO4)) 782495-58-3P, Lithium tantalum oxide phosphate (Li2.8Ta0.2O0.4(PO4)) 782495-59-4P, Lithium tungsten oxide phosphate (Li2.8W0.2O0.5(PO4)) 782495-60-7P, Lithium titanium oxide phosphate (Li4Ti0.25O(PO4)) 782495-61-8P, Lithium vanadium oxide phosphate (Li3.75V0.25O(PO4)) 782495-62-9P, Chromium lithium oxide phosphate (Cr0.25Li3.5O(PO4)) 782495-63-0P, Lithium manganese oxide phosphate (Li3.25Mn0.25O(PO4)) 782495-64-1P, Lithium niobium oxide phosphate (Li3.75Nb0.25O(PO4)) 782495-65-2P, Lithium molybdenum oxide phosphate (Li3.5Mo0.25O(PO4)) 782495-66-3P, Lithium tantalum oxide phosphate (Li3.75Ta0.25O(PO4)) 782495-67-4P, Lithium tungsten oxide phosphate (Li3.5W0.25O(PO4)) 782495-69-6P, Lithium tungsten oxide phosphate (Li3.02W0.01O0.04(PO4)) 782495-70-9P, Lithium tungsten oxide phosphate (Li3.2W0.1O0.4(PO4)) 782495-72-1P, Lithium tungsten oxide phosphate (Li3.66W0.33O1.32(PO4)) 782495-74-3P, Lithium tungsten oxide phosphate (Li5WO4(PO4)) 782495-76-5P, Lithium tungsten oxide phosphate (Li7W2O8(PO4)) **816415-85-7P**, Boron lithium nitride oxide (BLi0.8N0.3O1.45) **816416-34-9P**, Germanium lithium nitride oxide (GeLi1.8N0.3O2.45) **816416-38-3P**, Aluminum lithium nitride oxide (AlLi0.8N0.3O1.45) **816416-40-7P**, Aluminum lithium nitride oxide (AlLi4.8N0.3O3.45) **816416-44-1P**, Gallium lithium

nitride oxide (GaLi0.8N0.3O1.45) **816416-46-3P**, Lithium sulfur nitride oxide (Li1.8SN0.3O3.45) **816416-50-9P**, Boron lithium nitride oxide silicate (B0.5Li2.3N0.3O0.45(SiO4)0.5) **816416-52-1P**, Germanium lithium nitride oxide silicate (Ge0.5Li3.8N0.3O1.45(SiO4)0.5) **816416-54-3P**, Carbon lithium nitride oxide silicate (C0.5Li2.8N0.3O2.95(SiO4)0.5) **816416-56-5P**, Lithium silicon nitride oxide sulfate (Li2.8Si0.5N0.3O1.45(SO4)0.5) **816416-58-7P**, Germanium lithium borate nitride oxide (Ge0.5Li2.3(BO3)0.5N0.3O0.95) **816416-60-1P**, Aluminum lithium borate nitride oxide (Al0.5Li2.8(BO3)0.5N0.3O0.95) **816416-62-3P**, Boron lithium carbonate nitride oxide (B0.5Li1.3(CO3)0.5N0.3O0.45) **816416-64-5P**, Gallium lithium borate nitride oxide (Ga0.5Li0.8(BO2)0.5N0.3O0.45) **816416-66-7P**, Boron lithium nitride oxide sulfate (B0.5Li1.3N0.3O0.45(SO4)0.5) **816416-68-9P** **816416-70-3P**, Germanium lithium nitride oxide sulfate (Ge0.5Li2.8N0.3O1.45(SO4)0.5) **816416-72-5P**, Aluminum gallium lithium nitride oxide (Al0.5Ga0.5Li2.8N0.3O2.45) **816416-74-7P**, Carbon lithium nitride oxide sulfate (C0.5Li1.8N0.3O0.95(SO4)0.5) 882681-95-0P, Lithium titanium oxide phosphate (Li2.8Ti0.2O0.3(PO4)) 882682-19-1P, Lithium zirconium oxide phosphate (Li4Zr0.25O(PO4)) **882682-64-6P**, Lithium silicon nitride oxide (Li1.8SiN0.5O2.15) **884739-67-7P**, Lithium silicon nitride oxide (Li1.8SiN0.3O2.45) **885122-24-7P**, Aluminum lithium nitride oxide (AlLi1.8N0.3O2.45)
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation)
(anodes; manufacture of lithium secondary batteries having wet-stable oxide or nitride-based ionic conductors)

L16 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:384961 HCAPLUS
DOCUMENT NUMBER: 144:436091
TITLE: Lithium battery anode with inorg. compound. layer formed on active material layer
INVENTOR(S): Ugaji, Masaya; Mino, Shinji; Shibano, Yasuyuki; Ito, Shuji
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: PCT Int. Appl., 32 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006043470	A1	20060427	WO 2005-JP18917	200510 14

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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

EP 1677375	A1	20060705	EP 2005-793190	200510 14
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, BA, HR, IS, YU				
CN 1860628	A	20061108	CN 2005-80001076	200510 14
			<--	
US 2007020520	A1	20070125	US 2006-575889	200604 14
			<--	
PRIORITY APPLN. INFO.:			JP 2004-306649 A	200410 21
			<--	
			WO 2005-JP18917 W	200510 14

AB Disclosed is a neg. electrode for batteries which comprises a collector, an active material layer and an inorg. compound. layer. The active material layer is formed on the collector, and the inorg. compound. layer is formed on the surface of the active material layer. The general formula of the inorg. compound. layer is expressed as LixPTyOz or LixMOyNz. The compound. constituting the inorg. compound. layer has lithium ion conductivity and excellent moisture resistance.

IT **816415-85-7**, Boron lithium nitride oxide (BLi0.8N0.3O1.45) **816416-34-9**, Germanium lithium nitride oxide (GeLi1.8N0.3O2.45) **816416-38-3**, Aluminum lithium nitride oxide (AlLi0.8N0.3O1.45) **816416-40-7**, Aluminum lithium nitride oxide (AlLi4.8N0.3O3.45) **816416-42-9**, Carbon lithium nitride oxide (CLi1.8N0.3O2.45) **816416-44-1**, Gallium lithium nitride oxide (GaLi0.8N0.3O1.45) **816416-46-3**, Lithium sulfur nitride oxide (Li1.8SN0.3O3.45) **816416-50-9**, Boron lithium nitride oxide silicate (B0.5Li2.3N0.3O0.45(SiO4)0.5) **816416-52-1**, Germanium lithium nitride oxide silicate (Ge0.5Li3.8N0.3O1.45(SiO4)0.5) **816416-54-3**, Carbon lithium nitride oxide silicate (C0.5Li2.8N0.3O2.95(SiO4)0.5) **816416-56-5**, Lithium silicon nitride oxide sulfate (Li2.8Si0.5N0.3O1.45(SO4)0.5) **816416-58-7**, Germanium lithium borate nitride oxide (Ge0.5Li2.3(BO3)0.5N0.3O0.95) **816416-60-1**, Aluminum lithium borate nitride oxide (Al0.5Li2.8(BO3)0.5N0.3O0.95) **816416-62-3**, Boron lithium carbonate nitride oxide (B0.5Li1.3(CO3)0.5N0.3O0.45) **816416-64-5**, Gallium lithium borate nitride oxide (Ga0.5Li0.8(BO2)0.5N0.3O0.45) **816416-66-7**, Boron lithium nitride oxide sulfate (B0.5Li1.3N0.3O0.45(SO4)0.5) **816416-68-9** **816416-70-3**, Germanium lithium nitride oxide sulfate (Ge0.5Li2.8N0.3O1.45(SO4)0.5) **816416-74-7**, Carbon lithium nitride oxide sulfate (C0.5Li1.8N0.3O0.95(SO4)0.5)

882682-64-6, Lithium silicon nitride oxide (Li1.8SiN0.5O2.15) **884739-67-7**, Lithium silicon nitride oxide (Li1.8SiN0.3O2.45)
RL: TEM (Technical or engineered material use); USES (Uses)
(inorg. compound. layer for lithium battery)

RN 816415-85-7 HCAPLUS
CN Boron lithium nitride oxide (BLi0.8N0.3O1.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
B	1	7440-42-8
Li	0.8	7439-93-2

RN 816416-34-9 HCAPLUS
CN Germanium lithium nitride oxide (GeLi1.8N0.3O2.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	2.45	17778-80-2
Ge	1	7440-56-4
Li	1.8	7439-93-2

RN 816416-38-3 HCAPLUS
CN Aluminum lithium nitride oxide (AlLi0.8N0.3O1.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
Li	0.8	7439-93-2
Al	1	7429-90-5

RN 816416-40-7 HCAPLUS
CN Aluminum lithium nitride oxide (AlLi4.8N0.3O3.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	3.45	17778-80-2
Li	4.8	7439-93-2
Al	1	7429-90-5

RN 816416-42-9 HCAPLUS
CN Carbon lithium nitride oxide (CLi1.8N0.3O2.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	2.45	17778-80-2
C	1	7440-44-0
Li	1.8	7439-93-2

RN 816416-44-1 HCAPLUS
CN Gallium lithium nitride oxide (GaLi0.8N0.3O1.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
Ga	1	7440-55-3
Li	0.8	7439-93-2

RN 816416-46-3 HCAPLUS
CN Lithium sulfur nitride oxide (Li1.8SN0.3O3.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	3.45	17778-80-2
S	1	7704-34-9
Li	1.8	7439-93-2

RN 816416-50-9 HCAPLUS
CN Boron lithium nitride oxide silicate (B0.5Li2.3N0.3O0.45(SiO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.45	17778-80-2
O4Si	0.5	17181-37-2
B	0.5	7440-42-8
Li	2.3	7439-93-2

RN 816416-52-1 HCAPLUS
CN Germanium lithium nitride oxide silicate (Ge0.5Li3.8N0.3O1.45(SiO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
O4Si	0.5	17181-37-2
Ge	0.5	7440-56-4
Li	3.8	7439-93-2

RN 816416-54-3 HCAPLUS
CN Carbon lithium nitride oxide silicate (C0.5Li2.8N0.3O2.95(SiO4)0.5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.95	17778-80-2
O4Si	0.5	17181-37-2
C	0.5	7440-44-0
Li	2.8	7439-93-2

RN 816416-56-5 HCAPLUS
CN Lithium silicon nitride oxide sulfate (Li2.8Si0.5N0.3O1.45(SO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
O4S	0.5	14808-79-8
Si	0.5	7440-21-3
Li	2.8	7439-93-2

RN 816416-58-7 HCAPLUS
CN Germanium lithium borate nitride oxide (Ge0.5Li2.3(BO3)0.5N0.3O0.95) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.95	17778-80-2
BO3	0.5	14213-97-9
Ge	0.5	7440-56-4
Li	2.3	7439-93-2

RN 816416-60-1 HCAPLUS
CN Aluminum lithium borate nitride oxide (Al0.5Li2.8(BO3)0.5N0.3O0.95) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.95	17778-80-2
BO3	0.5	14213-97-9
Li	2.8	7439-93-2
Al	0.5	7429-90-5

RN 816416-62-3 HCAPLUS
CN Boron lithium carbonate nitride oxide (B0.5Li1.3(CO3)0.5N0.3O0.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.45	17778-80-2
B	0.5	7440-42-8
Li	1.3	7439-93-2
CO3	0.5	3812-32-6

RN 816416-64-5 HCAPLUS
CN Gallium lithium borate nitride oxide (Ga0.5Li0.8(BO2)0.5N0.3O0.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number

N	0.3	17778-88-0
O	0.45	17778-80-2
BO2	0.5	14100-65-3
Ga	0.5	7440-55-3
Li	0.8	7439-93-2

RN 816416-66-7 HCAPLUS
CN Boron lithium nitride oxide sulfate (B0.5Li1.3N0.3O0.45(SO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.45	17778-80-2
O4S	0.5	14808-79-8
B	0.5	7440-42-8
Li	1.3	7439-93-2

RN 816416-68-9 HCAPLUS
CN Germanium lithium carbonate nitride oxide (Ge0.5Li2.8(CO3)0.5N0.3O1.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
Ge	0.5	7440-56-4
Li	2.8	7439-93-2
CO3	0.5	3812-32-6

RN 816416-70-3 HCAPLUS
CN Germanium lithium nitride oxide sulfate (Ge0.5Li2.8N0.3O1.45(SO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
O4S	0.5	14808-79-8
Ge	0.5	7440-56-4
Li	2.8	7439-93-2

RN 816416-74-7 HCAPLUS
CN Carbon lithium nitride oxide sulfate (C0.5Li1.8N0.3O0.95(SO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.95	17778-80-2
O4S	0.5	14808-79-8
C	0.5	7440-44-0
Li	1.8	7439-93-2

RN 882682-64-6 HCAPLUS
CN Lithium silicon nitride oxide (Li1.8SiN0.5O2.15) (9CI) (CA INDEX

NAME)

Component	Ratio	Component Registry Number
N	0.5	17778-88-0
O	2.15	17778-80-2
Si	1	7440-21-3
Li	1.8	7439-93-2

RN 884739-67-7 HCAPLUS
CN Lithium silicon nitride oxide (Li1.8SiN0.3O2.45) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	2.45	17778-80-2
Si	1	7440-21-3
Li	1.8	7439-93-2

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
IT 782495-53-8, Copper lithium oxide phosphate (Cu0.2Li2.8O0.1(PO4)) 782495-54-9, Lithium zirconium oxide phosphate (Li2.8Zr0.2O0.3(PO4)) 782495-56-1, Lithium molybdenum oxide phosphate (Li2.8Mo0.2O0.5(PO4)) 782495-58-3, Lithium tantalum oxide phosphate (Li2.8Ta0.2O0.4(PO4)) 782495-59-4, Lithium tungsten oxide phosphate (Li2.8W0.2O0.5(PO4)) 782495-60-7, Lithium titanium oxide phosphate (Li4Ti0.25O(PO4)) 782495-65-2, Lithium molybdenum oxide phosphate (Li3.5Mo0.25O(PO4)) 782495-66-3, Lithium tantalum oxide phosphate (Li3.75Ta0.25O(PO4)) 782495-67-4, Lithium tungsten oxide phosphate (Li3.5W0.25O(PO4)) 782495-69-6, Lithium tungsten oxide phosphate (Li3.02W0.01O0.04(PO4)) 782495-70-9, Lithium tungsten oxide phosphate (Li3.2W0.1O0.4(PO4)) 782495-72-1, Lithium tungsten oxide phosphate (Li3.66W0.33O1.32(PO4)) 782495-74-3, Lithium tungsten oxide phosphate (Li5WO4(PO4)) 782495-76-5, Lithium tungsten oxide phosphate (Li7W2O8(PO4)) **816415-85-7**, Boron lithium nitride oxide (BLi0.8N0.3O1.45) **816416-34-9**, Germanium lithium nitride oxide (GeLi1.8N0.3O2.45) **816416-38-3**, Aluminum lithium nitride oxide (AlLi0.8N0.3O1.45) **816416-40-7**, Aluminum lithium nitride oxide (AlLi4.8N0.3O3.45) **816416-42-9**, Carbon lithium nitride oxide (CLi1.8N0.3O2.45) **816416-44-1**, Gallium lithium nitride oxide (GaLi0.8N0.3O1.45) **816416-46-3**, Lithium sulfur nitride oxide (Li1.8SN0.3O3.45) **816416-50-9**, Boron lithium nitride oxide silicate (B0.5Li2.3N0.3O0.45(SiO4)0.5) **816416-52-1**, Germanium lithium nitride oxide silicate (Ge0.5Li3.8N0.3O1.45(SiO4)0.5) **816416-54-3**, Carbon lithium nitride oxide silicate (C0.5Li2.8N0.3O2.95(SiO4)0.5) **816416-56-5**, Lithium silicon nitride oxide sulfate (Li2.8Si0.5N0.3O1.45(SO4)0.5) **816416-58-7**, Germanium lithium borate nitride oxide (Ge0.5Li2.3(BO3)0.5N0.3O0.95) **816416-60-1**, Aluminum lithium borate nitride oxide (Al0.5Li2.8(BO3)0.5N0.3O0.95) **816416-62-3**, Boron lithium carbonate nitride oxide (B0.5Li1.3(CO3)0.5N0.3O0.45) **816416-64-5**, Gallium lithium borate nitride oxide (Ga0.5Li0.8(BO2)0.5N0.3O0.45) **816416-66-7**, Boron lithium nitride oxide sulfate (B0.5Li1.3N0.3O0.45(SO4)0.5) **816416-68-9** **816416-70-3**, Germanium lithium nitride

oxide sulfate (Ge0.5Li2.8N0.3O1.45(SO4)0.5) **816416-74-7**, Carbon lithium nitride oxide sulfate (C0.5Li1.8N0.3O0.95(SO4)0.5) 882681-95-0, Lithium titanium oxide phosphate (Li2.8Ti0.2O0.3(PO4)) 882682-19-1, Lithium zirconium oxide phosphate (Li4Zr0.25O(PO4)) **882682-64-6**, Lithium silicon nitride oxide (Li1.8SiN0.5O2.15) **884739-67-7**, Lithium silicon nitride oxide (Li1.8SiN0.3O2.45)
RL: TEM (Technical or engineered material use); USES (Uses)
(inorg. compound. layer for lithium battery)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:340654 HCAPLUS
DOCUMENT NUMBER: 144:394643
TITLE: Lithium anode with lithium mixed oxide protective coating for secondary lithium battery
INVENTOR(S): Ukaji, Masaya; Mino, Shinji; Shibano, Yasuyuki; Ito, Shuji
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006100083	A	20060413	JP 2004-283846 <--	200409 29
PRIORITY APPLN. INFO.:			JP 2004-283846 <--	200409 29

AB The anode comprises a Li or a Li alloy anode coated with (1) a pretreatment layer containing a Li ion conductive substance and (2) a protective layer comprising LixPTyOz (T = Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zr, Nb, Mo, Ru, Ag, Ta, W, Pt, and/or Au; x = 2.0-7.0; y = 0.01-1.0; z = 3.5-8.0) or LixMOyNz [M = Si, B, Ge, Al, C, Ga, and/or S; (a) x = 0.6-1.0, y = 1.05-1.99, z = 0.01-0.5, (b) x = 1.6-2.0, y = 2.05-2.99, z = 0.01-0.5, (c) x = 1.6-2.0, y = 3.05-3.99, z = 0.01-0.5, or (d) x = 4.6-5.0, y = 3.05-3.99, z = 0.01-0.5]. Secondary lithium battery equipped with the anode is also claimed. Since the protective layer has high stability to water and ion conductivity, deterioration of the anode is prevented, and the battery has excellent cycling performance.

IT **816415-85-7**, Boron lithium nitride oxide (BLi0.8N0.3O1.45) **816416-34-9**, Germanium lithium nitride oxide (GeLi1.8N0.3O2.45) **816416-38-3**, Aluminum lithium nitride oxide (AlLi0.8N0.3O1.45) **816416-40-7**, Aluminum lithium nitride oxide (AlLi4.8N0.3O3.45) **816416-42-9**, Carbon lithium nitride oxide (CLi1.8N0.3O2.45) **816416-44-1**, Gallium lithium nitride oxide (GaLi0.8N0.3O1.45) **816416-46-3**, Lithium sulfur nitride oxide (Li1.8SN0.3O3.45) **816416-50-9**, Boron lithium nitride oxide silicate (B0.5Li2.3N0.3O0.45(SiO4)0.5)

816416-52-1, Germanium lithium nitride oxide silicate (Ge0.5Li3.8N0.3O1.45(SiO4)0.5) **816416-54-3**, Carbon lithium nitride oxide silicate (C0.5Li2.8N0.3O2.95(SiO4)0.5) **816416-56-5**, Lithium silicon nitride oxide sulfate (Li2.8Si0.5N0.3O1.45(SO4)0.5) **816416-58-7**, Germanium lithium borate nitride oxide (Ge0.5Li2.3(BO3)0.5N0.3O0.95) **816416-60-1**, Aluminum lithium borate nitride oxide (Al0.5Li2.8(BO3)0.5N0.3O0.95) **816416-62-3**, Boron lithium carbonate nitride oxide (B0.5Li1.3(CO3)0.5N0.3O0.45) **816416-64-5**, Gallium lithium borate nitride oxide (Ga0.5Li0.8(BO2)0.5N0.3O0.45) **816416-66-7**, Boron lithium nitride oxide sulfate (B0.5Li1.3N0.3O0.45(SO4)0.5) **816416-68-9** **816416-70-3**, Germanium lithium nitride oxide sulfate (Ge0.5Li2.8N0.3O1.45(SO4)0.5) **816416-74-7**, Carbon lithium nitride oxide sulfate (C0.5Li1.8N0.3O0.95(SO4)0.5) **882682-60-2**, Aluminum gallium lithium nitride oxide (Al0.5Ga0.5Li2.8N0.3O3.45) **882682-64-6**, Lithium silicon nitride oxide (Li1.8SiN0.5O2.15) **884739-67-7**, Lithium silicon nitride oxide (Li1.8SiN0.3O2.45)
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(protective coating; anode having lithium mixed oxide protective coating with high water resistance and ion conductivity on pretreatment coating for Li battery)

RN 816415-85-7 HCAPLUS
CN Boron lithium nitride oxide (BLi0.8N0.3O1.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
B	1	7440-42-8
Li	0.8	7439-93-2

RN 816416-34-9 HCAPLUS
CN Germanium lithium nitride oxide (GeLi1.8N0.3O2.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	2.45	17778-80-2
Ge	1	7440-56-4
Li	1.8	7439-93-2

RN 816416-38-3 HCAPLUS
CN Aluminum lithium nitride oxide (AlLi0.8N0.3O1.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
Li	0.8	7439-93-2
Al	1	7429-90-5

RN 816416-40-7 HCAPLUS
CN Aluminum lithium nitride oxide (AlLi4.8N0.3O3.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	3.45	17778-80-2
Li	4.8	7439-93-2
Al	1	7429-90-5

RN 816416-42-9 HCAPLUS
CN Carbon lithium nitride oxide (CLi1.8N0.3O2.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	2.45	17778-80-2
C	1	7440-44-0
Li	1.8	7439-93-2

RN 816416-44-1 HCAPLUS
CN Gallium lithium nitride oxide (GaLi0.8N0.3O1.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
Ga	1	7440-55-3
Li	0.8	7439-93-2

RN 816416-46-3 HCAPLUS
CN Lithium sulfur nitride oxide (Li1.8SN0.3O3.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	3.45	17778-80-2
S	1	7704-34-9
Li	1.8	7439-93-2

RN 816416-50-9 HCAPLUS
CN Boron lithium nitride oxide silicate (B0.5Li2.3N0.3O0.45(SiO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.45	17778-80-2
O4Si	0.5	17181-37-2
B	0.5	7440-42-8
Li	2.3	7439-93-2

RN 816416-52-1 HCAPLUS
CN Germanium lithium nitride oxide silicate (Ge0.5Li3.8N0.3O1.45(SiO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number

N	0.3	17778-88-0
O	1.45	17778-80-2
O4Si	0.5	17181-37-2
Ge	0.5	7440-56-4
Li	3.8	7439-93-2

RN 816416-54-3 HCAPLUS
CN Carbon lithium nitride oxide silicate (C0.5Li2.8N0.3O2.95(SiO4)0.5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.95	17778-80-2
O4Si	0.5	17181-37-2
C	0.5	7440-44-0
Li	2.8	7439-93-2

RN 816416-56-5 HCAPLUS
CN Lithium silicon nitride oxide sulfate (Li2.8Si0.5N0.3O1.45(SO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
O4S	0.5	14808-79-8
Si	0.5	7440-21-3
Li	2.8	7439-93-2

RN 816416-58-7 HCAPLUS
CN Germanium lithium borate nitride oxide (Ge0.5Li2.3(BO3)0.5N0.3O0.95) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.95	17778-80-2
BO3	0.5	14213-97-9
Ge	0.5	7440-56-4
Li	2.3	7439-93-2

RN 816416-60-1 HCAPLUS
CN Aluminum lithium borate nitride oxide (Al0.5Li2.8(BO3)0.5N0.3O0.95) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.95	17778-80-2
BO3	0.5	14213-97-9
Li	2.8	7439-93-2
Al	0.5	7429-90-5

RN 816416-62-3 HCAPLUS

CN Boron lithium carbonate nitride oxide (B0.5Li1.3(CO3)0.5N0.3O0.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.45	17778-80-2
B	0.5	7440-42-8
Li	1.3	7439-93-2
CO3	0.5	3812-32-6

RN 816416-64-5 HCAPLUS
CN Gallium lithium borate nitride oxide (Ga0.5Li0.8(BO2)0.5N0.3O0.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.45	17778-80-2
BO2	0.5	14100-65-3
Ga	0.5	7440-55-3
Li	0.8	7439-93-2

RN 816416-66-7 HCAPLUS
CN Boron lithium nitride oxide sulfate (B0.5Li1.3N0.3O0.45(SO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.45	17778-80-2
O4S	0.5	14808-79-8
B	0.5	7440-42-8
Li	1.3	7439-93-2

RN 816416-68-9 HCAPLUS
CN Germanium lithium carbonate nitride oxide (Ge0.5Li2.8(CO3)0.5N0.3O1.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
Ge	0.5	7440-56-4
Li	2.8	7439-93-2
CO3	0.5	3812-32-6

RN 816416-70-3 HCAPLUS
CN Germanium lithium nitride oxide sulfate (Ge0.5Li2.8N0.3O1.45(SO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2

O4S	0.5	14808-79-8
Ge	0.5	7440-56-4
Li	2.8	7439-93-2

RN 816416-74-7 HCAPLUS
CN Carbon lithium nitride oxide (C0.5Li1.8N0.3O0.95(SO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.95	17778-80-2
O4S	0.5	14808-79-8
C	0.5	7440-44-0
Li	1.8	7439-93-2

RN 882682-60-2 HCAPLUS
CN Aluminum gallium lithium nitride oxide (Al0.5Ga0.5Li2.8N0.3O3.45) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	3.45	17778-80-2
Ga	0.5	7440-55-3
Li	2.8	7439-93-2
Al	0.5	7429-90-5

RN 882682-64-6 HCAPLUS
CN Lithium silicon nitride oxide (Li1.8SiN0.5O2.15) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.5	17778-88-0
O	2.15	17778-80-2
Si	1	7440-21-3
Li	1.8	7439-93-2

RN 884739-67-7 HCAPLUS
CN Lithium silicon nitride oxide (Li1.8SiN0.3O2.45) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	2.45	17778-80-2
Si	1	7440-21-3
Li	1.8	7439-93-2

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
IT 782495-23-2, Lithium titanium metaphosphate oxide (Li2.8Ti0.2(PO3)O0.9) 782495-24-3, Lithium vanadium metaphosphate oxide (Li2.8V0.2(PO3)O0.9) 782495-25-4, Chromium lithium metaphosphate oxide (Cr0.2Li2.8(PO3)O0.9) 782495-26-5, Lithium manganese metaphosphate oxide (Li2.8Mn0.2(PO3)O0.9) 782495-27-6,

Iron lithium metaphosphate oxide (Fe0.2Li2.8(PO3)O0.9) 782495-28-7, Cobalt lithium metaphosphate oxide (Co0.2Li2.8(PO3)O0.9) 782495-29-8, Lithium nickel metaphosphate oxide (Li2.8Ni0.2(PO3)O0.9) 782495-30-1, Copper lithium metaphosphate oxide (Cu0.2Li2.8(PO3)O0.9) 782495-31-2, Lithium zirconium metaphosphate oxide (Li2.8Zr0.2(PO3)O0.9) 782495-32-3, Lithium niobium metaphosphate oxide (Li2.8Nb0.2(PO3)O0.9) 782495-33-4, Lithium molybdenum metaphosphate oxide (Li2.8Mo0.2(PO3)O0.9) 782495-34-5, Lithium ruthenium metaphosphate oxide (Li2.8Ru0.2(PO3)O0.9) 782495-35-6, Lithium silver metaphosphate oxide (Li2.8Ag0.2(PO3)O0.9) 782495-36-7, Lithium tantalum metaphosphate oxide (Li2.8Ta0.2(PO3)O0.9) 782495-38-9, Lithium platinum metaphosphate oxide (Li2.8Pt0.2(PO3)O0.9) 782495-39-0, Gold lithium metaphosphate oxide (Au0.2Li2.8(PO3)O0.9) 782495-41-4, Lithium tungsten metaphosphate oxide (Li2.8W0.01(PO3)O0.9) 782495-42-5, Lithium tungsten metaphosphate oxide (Li2.8W0.05(PO3)O0.9) 782495-43-6, Lithium tungsten metaphosphate oxide (Li2.8W0.1(PO3)O0.9) 782495-44-7, Lithium tungsten metaphosphate oxide (Li2.8W0.5(PO3)O0.9) 782495-47-0, Lithium vanadium oxide phosphate (Li2.8V0.2O0.4(PO4)) 782495-48-1, Chromium lithium oxide phosphate (Cr0.2Li2.8O0.2(PO4)) 782495-49-2, Lithium manganese oxide phosphate (Li2.8Mn0.2O0.3(PO4)) 782495-50-5, Iron lithium oxide phosphate (Fe0.2Li2.8O0.17(PO4)) 782495-51-6, Cobalt lithium oxide phosphate (Co0.2Li2.8O0.17(PO4)) 782495-52-7, Lithium nickel oxide phosphate (Li2.8Ni0.2O0.1(PO4)) 782495-53-8, Copper lithium oxide phosphate (Cu0.2Li2.8O0.1(PO4)) 782495-54-9, Lithium zirconium oxide phosphate (Li2.8Zr0.2O0.3(PO4)) 782495-55-0, Lithium niobium oxide phosphate (Li2.8Nb0.2O0.4(PO4)) 782495-56-1, Lithium molybdenum oxide phosphate (Li2.8Mo0.2O0.5(PO4)) 782495-57-2, Lithium silver phosphate (Li2.8Ag0.2(PO4)) 782495-58-3, Lithium tantalum oxide phosphate (Li2.8Ta0.2O0.4(PO4)) 782495-59-4, Lithium tungsten oxide phosphate (Li2.8W0.2O0.5(PO4)) 782495-60-7, Lithium titanium oxide phosphate (Li4Ti0.25O(PO4)) 782495-61-8, Lithium vanadium oxide phosphate (Li3.75V0.25O(PO4)) 782495-62-9, Chromium lithium oxide phosphate (Cr0.25Li3.5O(PO4)) 782495-63-0, Lithium manganese oxide phosphate (Li3.25Mn0.25O(PO4)) 782495-64-1, Lithium niobium oxide phosphate (Li3.75Nb0.25O(PO4)) 782495-65-2, Lithium molybdenum oxide phosphate (Li3.5Mo0.25O(PO4)) 782495-66-3, Lithium tantalum oxide phosphate (Li3.75Ta0.25O(PO4)) 782495-67-4, Lithium tungsten oxide phosphate (Li3.5W0.25O(PO4)) 782495-69-6, Lithium tungsten oxide phosphate (Li3.02W0.01O0.04(PO4)) 782495-70-9, Lithium tungsten oxide phosphate (Li3.2W0.1O0.4(PO4)) 782495-72-1, Lithium tungsten oxide phosphate (Li3.66W0.33O1.32(PO4)) 782495-74-3, Lithium tungsten oxide phosphate (Li5WO4(PO4)) **816415-85-7**, Boron lithium nitride oxide (BLi0.8N0.3O1.45) **816416-34-9**, Germanium lithium nitride oxide (GeLi1.8N0.3O2.45) **816416-38-3**, Aluminum lithium nitride oxide (AlLi0.8N0.3O1.45) **816416-40-7**, Aluminum lithium nitride oxide (AlLi4.8N0.3O3.45) **816416-42-9**, Carbon lithium nitride oxide (CLi1.8N0.3O2.45) **816416-44-1**, Gallium lithium nitride oxide (GaLi0.8N0.3O1.45) **816416-46-3**, Lithium sulfur nitride oxide (Li1.8SN0.3O3.45) **816416-50-9**, Boron lithium nitride oxide silicate (B0.5Li2.3N0.3O0.45(SiO4)0.5) **816416-52-1**, Germanium lithium nitride oxide silicate (Ge0.5Li3.8N0.3O1.45(SiO4)0.5) **816416-54-3**, Carbon lithium nitride oxide silicate (C0.5Li2.8N0.3O2.95(SiO4)0.5) **816416-56-5**, Lithium silicon nitride oxide sulfate (Li2.8Si0.5N0.3O1.45(SO4)0.5) **816416-58-7**, Germanium lithium borate nitride oxide (Ge0.5Li2.3(BO3)0.5N0.3O0.95)

816416-60-1, Aluminum lithium borate nitride oxide (Al0.5Li2.8(BO3)0.5N0.3O0.95) **816416-62-3**, Boron lithium carbonate nitride oxide (B0.5Li1.3(CO3)0.5N0.3O0.45) **816416-64-5**, Gallium lithium borate nitride oxide (Ga0.5Li0.8(BO2)0.5N0.3O0.45) **816416-66-7**, Boron lithium nitride oxide sulfate (B0.5Li1.3N0.3O0.45(SO4)0.5) **816416-68-9** **816416-70-3**, Germanium lithium nitride oxide sulfate (Ge0.5Li2.8N0.3O1.45(SO4)0.5) **816416-74-7**, Carbon lithium nitride oxide sulfate (C0.5Li1.8N0.3O0.95(SO4)0.5) 882681-95-0, Lithium titanium oxide phosphate (Li2.8Ti0.2O0.3(PO4)) 882682-19-1, Lithium zirconium oxide phosphate (Li4Zr0.25O(PO4)) **882682-60-2**, Aluminum gallium lithium nitride oxide (Al0.5Ga0.5Li2.8N0.3O3.45) **882682-64-6**, Lithium silicon nitride oxide (Li1.8SiN0.5O2.15) **884739-67-7**, Lithium silicon nitride oxide (Li1.8SiN0.3O2.45)
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(protective coating; anode having lithium mixed oxide protective coating with high water resistance and ion conductivity on pretreatment coating for Li battery)

L16 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:16060 HCAPLUS
DOCUMENT NUMBER: 142:97542
TITLE: Solid electrolyte for all-solid battery
INVENTOR(S): Ugaji, Masaya; Mino, Shinji; Shibano, Yasuyuki; Ito, Shuji
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: PCT Int. Appl., 28 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005001982	A1	20050106	WO 2004-JP9299	200406 24
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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP 2005038844	A	20050210	JP 2004-186807	200406 24
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JP 3677509	B2	20050803		
EP 1675206	A1	20060628	EP 2004-746768	

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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK
CN 1799161 A 20060705 CN 2004-80014895
200406
24
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US 2007042272 A1 20070222 US 2005-553238
200510
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PRIORITY APPLN. INFO.: JP 2003-184626 A
200306
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WO 2004-JP9299 W
200406
24
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AB The title solid electrolyte can be represented by the following general formula: LixMOvNz (wherein M represents at least one element selected from the group consisting of Si, B, Ge, Al, C, Ga and S; and x = 0.6-5.0, v = 1.050-3.985, and z = 0.01-0.50). The material is used for preparation of all-solid battery and is characterized by having good resistance to humidity.

IT **816415-83-5**, Lithium nitride oxide silicate (Li3.8N0.3O0.45(SiO3)) **816415-85-7**, Boron lithium nitride oxide (BLi0.8N0.3O1.45) **816416-34-9**, Germanium lithium nitride oxide (GeLi1.8N0.3O2.45) **816416-36-1**, Germanium lithium nitride oxide (GeLi3.8N0.3O3.45) **816416-38-3**, Aluminum lithium nitride oxide (AlLi0.8N0.3O1.45) **816416-40-7**, Aluminum lithium nitride oxide (AlLi4.8N0.3O3.45) **816416-42-9**, Carbon lithium nitride oxide (CLi1.8N0.3O2.45) **816416-44-1**, Gallium lithium nitride oxide (GaLi0.8N0.3O1.45) **816416-46-3**, Lithium sulfur nitride oxide (Li1.8SN0.3O3.45) **816416-50-9**, Boron lithium nitride oxide silicate (B0.5Li2.3N0.3O0.45(SiO4)0.5) **816416-52-1**, Germanium lithium nitride oxide silicate (Ge0.5Li3.8N0.3O1.45(SiO4)0.5) **816416-54-3**, Carbon lithium nitride oxide silicate (C0.5Li2.8N0.3O2.95(SiO4)0.5) **816416-56-5**, Lithium silicon nitride oxide sulfate (Li2.8Si0.5N0.3O1.45(SO4)0.5) **816416-58-7**, Germanium lithium borate nitride oxide (Ge0.5Li2.3(BO3)0.5N0.3O0.95) **816416-60-1**, Aluminum lithium borate nitride oxide (Al0.5Li2.8(BO3)0.5N0.3O0.95) **816416-62-3**, Boron lithium carbonate nitride oxide (B0.5Li1.3(CO3)0.5N0.3O0.45) **816416-64-5**, Gallium lithium borate nitride oxide (Ga0.5Li0.8(BO2)0.5N0.3O0.45) **816416-66-7**, Boron lithium nitride oxide sulfate (B0.5Li1.3N0.3O0.45(SO4)0.5) **816416-68-9** **816416-70-3**, Germanium lithium nitride oxide sulfate (Ge0.5Li2.8N0.3O1.45(SO4)0.5) **816416-72-5**, Aluminum gallium lithium nitride oxide (Al0.5Ga0.5Li2.8N0.3O2.45) **816416-74-7**, Carbon lithium nitride oxide sulfate (C0.5Li1.8N0.3O0.95(SO4)0.5) **816416-78-1**, Lithium nitride oxide silicate (Li3.8N0.0100.89(SiO3)) **816416-80-5**, Lithium nitride oxide silicate (Li3.8N0.100.75(SiO3)) **816416-83-8**, Lithium nitride oxide silicate (Li3.8N0.500.15(SiO3))

RL: TEM (Technical or engineered material use); USES (Uses)
(solid electrolyte; solid electrolyte for preparation of all-solid battery)

RN 816415-83-5 HCAPLUS
CN Lithium nitride oxide silicate (Li3.8N0.3O0.45(SiO3)) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.45	17778-80-2
O3Si	1	15593-90-5
Li	3.8	7439-93-2

RN 816415-85-7 HCAPLUS
CN Boron lithium nitride oxide (BLi0.8N0.3O1.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
B	1	7440-42-8
Li	0.8	7439-93-2

RN 816416-34-9 HCAPLUS
CN Germanium lithium nitride oxide (GeLi1.8N0.3O2.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	2.45	17778-80-2
Ge	1	7440-56-4
Li	1.8	7439-93-2

RN 816416-36-1 HCAPLUS
CN Germanium lithium nitride oxide (GeLi3.8N0.3O3.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	3.45	17778-80-2
Ge	1	7440-56-4
Li	3.8	7439-93-2

RN 816416-38-3 HCAPLUS
CN Aluminum lithium nitride oxide (AlLi0.8N0.3O1.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
Li	0.8	7439-93-2
Al	1	7429-90-5

RN 816416-40-7 HCAPLUS

CN Aluminum lithium nitride oxide (AlLi4.8N0.3O3.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	3.45	17778-80-2
Li	4.8	7439-93-2
Al	1	7429-90-5

RN 816416-42-9 HCAPLUS
CN Carbon lithium nitride oxide (CLi1.8N0.3O2.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	2.45	17778-80-2
C	1	7440-44-0
Li	1.8	7439-93-2

RN 816416-44-1 HCAPLUS
CN Gallium lithium nitride oxide (GaLi0.8N0.3O1.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
Ga	1	7440-55-3
Li	0.8	7439-93-2

RN 816416-46-3 HCAPLUS
CN Lithium sulfur nitride oxide (Li1.8SN0.3O3.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	3.45	17778-80-2
S	1	7704-34-9
Li	1.8	7439-93-2

RN 816416-50-9 HCAPLUS
CN Boron lithium nitride oxide silicate (B0.5Li2.3N0.3O0.45(SiO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.45	17778-80-2
O4Si	0.5	17181-37-2
B	0.5	7440-42-8
Li	2.3	7439-93-2

RN 816416-52-1 HCAPLUS
CN Germanium lithium nitride oxide silicate (Ge0.5Li3.8N0.3O1.45(SiO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
O4Si	0.5	17181-37-2
Ge	0.5	7440-56-4
Li	3.8	7439-93-2

RN 816416-54-3 HCAPLUS
CN Carbon lithium nitride oxide silicate (C0.5Li2.8N0.3O2.95(SiO4)0.5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.95	17778-80-2
O4Si	0.5	17181-37-2
C	0.5	7440-44-0
Li	2.8	7439-93-2

RN 816416-56-5 HCAPLUS
CN Lithium silicon nitride oxide sulfate (Li2.8Si0.5N0.3O1.45(SO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
O4S	0.5	14808-79-8
Si	0.5	7440-21-3
Li	2.8	7439-93-2

RN 816416-58-7 HCAPLUS
CN Germanium lithium borate nitride oxide (Ge0.5Li2.3(BO3)0.5N0.3O0.95) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.95	17778-80-2
BO3	0.5	14213-97-9
Ge	0.5	7440-56-4
Li	2.3	7439-93-2

RN 816416-60-1 HCAPLUS
CN Aluminum lithium borate nitride oxide (Al0.5Li2.8(BO3)0.5N0.3O0.95) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.95	17778-80-2
BO3	0.5	14213-97-9
Li	2.8	7439-93-2
Al	0.5	7429-90-5

RN 816416-62-3 HCAPLUS
CN Boron lithium carbonate nitride oxide (B0.5Li1.3(CO3)0.5N0.3O0.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.45	17778-80-2
B	0.5	7440-42-8
Li	1.3	7439-93-2
CO3	0.5	3812-32-6

RN 816416-64-5 HCAPLUS
CN Gallium lithium borate nitride oxide (Ga0.5Li0.8(BO2)0.5N0.3O0.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.45	17778-80-2
BO2	0.5	14100-65-3
Ga	0.5	7440-55-3
Li	0.8	7439-93-2

RN 816416-66-7 HCAPLUS
CN Boron lithium nitride oxide sulfate (B0.5Li1.3N0.3O0.45(SO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.45	17778-80-2
O4S	0.5	14808-79-8
B	0.5	7440-42-8
Li	1.3	7439-93-2

RN 816416-68-9 HCAPLUS
CN Germanium lithium carbonate nitride oxide (Ge0.5Li2.8(CO3)0.5N0.3O1.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
Ge	0.5	7440-56-4
Li	2.8	7439-93-2
CO3	0.5	3812-32-6

RN 816416-70-3 HCAPLUS
CN Germanium lithium nitride oxide sulfate (Ge0.5Li2.8N0.3O1.45(SO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number

N	0.3	17778-88-0
O	1.45	17778-80-2
O4S	0.5	14808-79-8
Ge	0.5	7440-56-4
Li	2.8	7439-93-2

RN 816416-72-5 HCAPLUS
CN Aluminum gallium lithium nitride oxide (Al0.5Ga0.5Li2.8N0.3O2.45) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	2.45	17778-80-2
Ga	0.5	7440-55-3
Li	2.8	7439-93-2
Al	0.5	7429-90-5

RN 816416-74-7 HCAPLUS
CN Carbon lithium nitride oxide sulfate (C0.5Li1.8N0.3O0.95(SO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.95	17778-80-2
O4S	0.5	14808-79-8
C	0.5	7440-44-0
Li	1.8	7439-93-2

RN 816416-78-1 HCAPLUS
CN Lithium nitride oxide silicate (Li3.8N0.01O0.89(SiO3)) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.01	17778-88-0
O	0.89	17778-80-2
O3Si	1	15593-90-5
Li	3.8	7439-93-2

RN 816416-80-5 HCAPLUS
CN Lithium nitride oxide silicate (Li3.8N0.1O0.75(SiO3)) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.1	17778-88-0
O	0.75	17778-80-2
O3Si	1	15593-90-5
Li	3.8	7439-93-2

RN 816416-83-8 HCAPLUS
CN Lithium nitride oxide silicate (Li3.8N0.5O0.15(SiO3)) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.5	17778-88-0
O	0.15	17778-80-2
O3Si	1	15593-90-5
Li	3.8	7439-93-2

IC ICM H01M010-36
ICS H01B001-06; H01M006-18
CC 52-3 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 72
IT 693781-19-0, Lithium metaphosphate nitride oxide (Li2.8(PO3)N0.3O0.45) **816415-83-5**, Lithium nitride oxide silicate (Li3.8N0.3O0.45(SiO3)) 816415-84-6, Lithium nitride oxide silicide (Li1.8N3O2.45Si) **816415-85-7**, Boron lithium nitride oxide (BLi0.8N0.3O1.45) **816416-34-9**, Germanium lithium nitride oxide (GeLi1.8N0.3O2.45) **816416-36-1**, Germanium lithium nitride oxide (GeLi3.8N0.3O3.45) **816416-38-3**, Aluminum lithium nitride oxide (AlLi0.8N0.3O1.45) **816416-40-7**, Aluminum lithium nitride oxide (AlLi4.8N0.3O3.45) **816416-42-9**, Carbon lithium nitride oxide (CLi1.8N0.3O2.45) **816416-44-1**, Gallium lithium nitride oxide (GaLi0.8N0.3O1.45) **816416-46-3**, Lithium sulfur nitride oxide (Li1.8SN0.3O3.45) **816416-50-9**, Boron lithium nitride oxide silicate (B0.5Li2.3N0.3O0.45(SiO4)0.5) **816416-52-1**, Germanium lithium nitride oxide silicate (Ge0.5Li3.8N0.3O1.45(SiO4)0.5) **816416-54-3**, Carbon lithium nitride oxide silicate (C0.5Li2.8N0.3O2.95(SiO4)0.5) **816416-56-5**, Lithium silicon nitride oxide sulfate (Li2.8Si0.5N0.3O1.45(SO4)0.5) **816416-58-7**, Germanium lithium borate nitride oxide (Ge0.5Li2.3(BO3)0.5N0.3O0.95) **816416-60-1**, Aluminum lithium borate nitride oxide (Al0.5Li2.8(BO3)0.5N0.3O0.95) **816416-62-3**, Boron lithium carbonate nitride oxide (B0.5Li1.3(CO3)0.5N0.3O0.45) **816416-64-5**, Gallium lithium borate nitride oxide (Ga0.5Li0.8(BO2)0.5N0.3O0.45) **816416-66-7**, Boron lithium nitride oxide sulfate (B0.5Li1.3N0.3O0.45(SO4)0.5) **816416-68-9** **816416-70-3**, Germanium lithium nitride oxide sulfate (Ge0.5Li2.8N0.3O1.45(SO4)0.5) **816416-72-5**, Aluminum gallium lithium nitride oxide (Al0.5Ga0.5Li2.8N0.3O2.45) **816416-74-7**, Carbon lithium nitride oxide sulfate (C0.5Li1.8N0.3O0.95(SO4)0.5) 816416-76-9, Lithium oxide silicate (Li3.8O0.89(SiO3)) **816416-78-1**, Lithium nitride oxide silicate (Li3.8N0.01O0.89(SiO3)) **816416-80-5**, Lithium nitride oxide silicate (Li3.8N0.1O0.75(SiO3)) **816416-83-8**, Lithium nitride oxide silicate (Li3.8N0.5O0.15(SiO3)) 816416-84-9, Lithium nitride silicate (Li3.8N0.6(SiO3)) 816416-86-1, Lithium silicon nitride oxide (Li3.8SiNO2.4)
RL: TEM (Technical or engineered material use); USES (Uses)
(solid electrolyte; solid electrolyte for preparation of all-solid battery)
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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L17 ANSWER 1 OF 21 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:707619 HCAPLUS
DOCUMENT NUMBER: 145:170694
TITLE: LixAaMmBbPOzNn cathodic material for secondary lithium battery, and uses thereof
INVENTOR(S): Li, Hong; Huang, Xuejie; Wang, Deyu; Chen, Liquan
PATENT ASSIGNEE(S): Institute of Physics, Chinese Academy of Sciences, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 7 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1691380	A	20051102	CN 2004-10037502	200404 23

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PRIORITY APPLN. INFO.: CN 2004-10037502 200404 23

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AB The title material has chemical formula of LixAaMmBbPOzNn(A = Na, Mg, Ti, V, Cr, Cu, Mn, Co, Ni, Zn, Ga, In, Ge, Ag, Hg, Au, Zr, Nb, W; M = Fe, Co, Mn, Ni, V; B = Li, Na, K, Ca, Mg, Ti, V, Cr, Cu, Mn, Co, Ni, Zn, Ga, In, Ge, Ag, Hg, Au, Zr, Nb, W; M and B are different element; $0.9 \leq x \leq 4$; $0 \leq a \leq 0.1$; $0.5 \leq m \leq 1$; $0 \leq b \leq 0.5$; $3 \leq z \leq 4$; and $0.01 \leq n \leq 1$). It has the advantages of good electronic conductivity and ionic conductivity, improved rate discharge ability and large lithium storage capacity.

IT **900170-70-9P 900170-89-0P 900170-93-6P 900171-10-0P**
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(lithium battery cathode active substance)

RN 900170-70-9 HCAPLUS
CN Germanium iron lithium sodium metaphosphate nitride oxide (Ge0.06Fe0.9Li0.92Na0.2(PO3)N0.12O0.9) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.12	17778-88-0
O	0.9	17778-80-2
O3P	1	15389-19-2
Ge	0.06	7440-56-4
Na	0.2	7440-23-5
Li	0.92	7439-93-2
Fe	0.9	7439-89-6

RN 900170-89-0 HCAPLUS
CN Gallium iron lithium vanadium metaphosphate nitride oxide (Ga0.02Fe0.7Li0.95V0.2(PO3)N0.1O0.9) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.1	17778-88-0
O	0.9	17778-80-2
O3P	1	15389-19-2
V	0.2	7440-62-2
Ga	0.02	7440-55-3
Li	0.95	7439-93-2
Fe	0.7	7439-89-6

RN 900170-93-6 HCAPLUS
CN Gallium indium iron lithium metaphosphate nitride oxide (Ga0.2In0.02Fe0.7Li0.95(PO3)N0.1O0.9) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.1	17778-88-0
O	0.9	17778-80-2
O3P	1	15389-19-2
In	0.02	7440-74-6
Ga	0.2	7440-55-3
Li	0.95	7439-93-2
Fe	0.7	7439-89-6

RN 900171-10-0 HCAPLUS
CN Germanium iron lithium metaphosphate nitride oxide (Ge0.1Fe0.8Li1.1(PO3)N0.1O0.9) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.1	17778-88-0
O	0.9	17778-80-2
O3P	1	15389-19-2
Ge	0.1	7440-56-4
Li	1.1	7439-93-2
Fe	0.8	7439-89-6

IC ICM H01M004-58
ICS H01M004-48
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
IT 900170-34-5P, Iron lithium metaphosphate nitride oxide (FeLi1.2(PO3)N0.2O0.8) 900170-37-8P, Iron lithium nitride phosphate (FeLi4N(PO4)) 900170-40-3P 900170-43-6P 900170-46-9P
900170-49-2P 900170-52-7P 900170-55-0P 900170-58-3P
900170-61-8P 900170-64-1P 900170-67-4P **900170-70-9P**
900170-73-2P 900170-76-5P 900170-79-8P 900170-82-3P
900170-85-6P **900170-89-0P 900170-93-6P**
900170-98-1P 900171-02-0P 900171-06-4P **900171-10-0P**
900171-14-4P 900171-18-8P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(lithium battery cathode active substance)

L17 ANSWER 2 OF 21 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:113385 HCAPLUS
DOCUMENT NUMBER: 144:195248
TITLE: Method of fabrication of long life thin film

battery
INVENTOR(S): Bates, John B.
PATENT ASSIGNEE(S): Oak Ridge Micro-Energy, Inc., USA
SOURCE: U.S., 10 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6994933	B1	20060207	US 2002-244260	200209 16

PRIORITY APPLN. INFO.: US 2002-244260 200209 16

AB A thin film battery includes an anode layer, a cathode layer and a solid electrolyte layer. The battery also includes, a planarization layer applied to the thin film battery. The planarization layer has a surface roughness of no more than about 1.0 nm root mean square and a flatness no larger than about 0.005 cm/in. A barrier layer is applied to the planarization layer. The barrier layer is provided by one or more layers of material selected from the group consisting of polymeric materials, metals and ceramic materials. The planarization layer and barrier layer are sufficient to reduce oxygen flux through the barrier layer to the anode layer to no more than about 1.6 μmol/m2-day, and H2O flux through the barrier layer to the anode layer to less than about 3.3 μmol/m2-day thereby improving the life of the thin film battery.

IT **875314-60-6 875314-61-7 875314-62-8 875314-63-9 875314-64-0 875314-65-1 875314-66-2 875314-67-3**
RL: DEV (Device component use); USES (Uses)
(method of fabrication of long life thin film battery)

RN 875314-60-6 HCAPLUS
CN Lithium metaphosphate nitride oxide sulfide (Li0.39(PO3)0.12N0.02O0.09S0.01) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.02	17778-88-0
O	0.09	17778-80-2
O3P	0.12	15389-19-2
S	0.01	7704-34-9
Li	0.39	7439-93-2

RN 875314-61-7 HCAPLUS
CN Lithium metaphosphate nitride oxide sulfide (Li0.4(PO3)0.12N0.03O0.08S0.01) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.03	17778-88-0

O	0.08	17778-80-2
O3P	0.12	15389-19-2
S	0.01	7704-34-9
Li	0.4	7439-93-2

RN 875314-62-8 HCAPLUS
CN Lithium metaphosphate nitride oxide sulfide (Li0.38(PO3)0.13N0.05O0.04S0.01) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.05	17778-88-0
O	0.04	17778-80-2
O3P	0.13	15389-19-2
S	0.01	7704-34-9
Li	0.38	7439-93-2

RN 875314-63-9 HCAPLUS
CN Lithium metaphosphate nitride oxide sulfide (Li0.38(PO3)0.13N0.06O0.03S0.01) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.06	17778-88-0
O	0.03	17778-80-2
O3P	0.13	15389-19-2
S	0.01	7704-34-9
Li	0.38	7439-93-2

RN 875314-64-0 HCAPLUS
CN Lithium metaphosphate nitride oxide sulfide (Li0.39(PO3)0.12N0.02O0.09S0.02) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.02	17778-88-0
O	0.09	17778-80-2
O3P	0.12	15389-19-2
S	0.02	7704-34-9
Li	0.39	7439-93-2

RN 875314-65-1 HCAPLUS
CN Lithium metaphosphate nitride oxide sulfide (Li0.38(PO3)0.13N0.04O0.04S0.02) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.04	17778-88-0
O	0.04	17778-80-2
O3P	0.13	15389-19-2
S	0.02	7704-34-9
Li	0.38	7439-93-2

RN 875314-66-2 HCAPLUS
CN Lithium metaphosphate nitride oxide sulfide (Li0.39(PO3)0.12N0.03O0.09S0.02) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.03	17778-88-0
O	0.09	17778-80-2
O3P	0.12	15389-19-2
S	0.02	7704-34-9
Li	0.39	7439-93-2

RN 875314-67-3 HCAPLUS
CN Lithium metaphosphate nitride oxide sulfide (Li0.37(PO3)0.13N0.06O0.03S0.02) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.06	17778-88-0
O	0.03	17778-80-2
O3P	0.13	15389-19-2
S	0.02	7704-34-9
Li	0.37	7439-93-2

INCL 429162000; 429163000; 429127000; 429124000; 429231950
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
IT 7439-93-2, Lithium, uses 184905-46-2, Lithium nitrogen phosphorus oxide **875314-60-6 875314-61-7 875314-62-8 875314-63-9 875314-64-0 875314-65-1 875314-66-2 875314-67-3**
RL: DEV (Device component use); USES (Uses)
(method of fabrication of long life thin film battery)
REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 3 OF 21 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:1332492 HCAPLUS
DOCUMENT NUMBER: 144:54471
TITLE: Synthesis of active material for nonaqueous electrolyte secondary battery
INVENTOR(S): Yoshizawa, Hiroshi; Nakanishi, Shinji; Koshina, Hizuru
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: U.S. Pat. Appl. Publ., 12 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005281727	A1	20051222	US 2005-152087	200506 15
JP 2006032321	A	20060202	JP 2005-168131 <--	200506 08

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CN 1694286 A 20051109 CN 2005-10078953 200506 14

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KR 2006049222 A 20060518 KR 2005-51475 200506 15

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PRIORITY APPLN. INFO.: JP 2004-178518 A 200406 16

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AB A resistivity of an active material is reduced to drastically decrease an amount of a conductive auxiliary agent to be added, in order to provide a nonaq. electrolyte secondary battery with high capacity. A material represented by a composition formula: LixMeOyNz, wherein $0 \leq x \leq 2$, $0.1 < y < 2.2$, $0 < z < 1.4$, and Me is at least one selected from the group consisting of Ti, Co, Ni, Mn, Si, Ge, and Sn is used as an active material.

IT **871475-57-9P**, Lithium silicon nitride oxide (Li0-2SiN0-1.4O0.1-2.2) **871475-59-1P**, Germanium lithium nitride oxide (GeLi0-2N0-1.4O0.1-2.2)
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(synthesis of active material for nonaq. electrolyte secondary battery)

RN 871475-57-9 HCAPLUS

CN Lithium silicon nitride oxide (Li0-2SiN0-1.4O0.1-2.2) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0 - 1.4	17778-88-0
O	0.1 - 2.2	17778-80-2
Si	1	7440-21-3
Li	0 - 2	7439-93-2

RN 871475-59-1 HCAPLUS

CN Germanium lithium nitride oxide (GeLi0-2N0-1.4O0.1-2.2) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0 - 1.4	17778-88-0
O	0.1 - 2.2	17778-80-2
Ge	1	7440-56-4
Li	0 - 2	7439-93-2

IC ICM H01M004-58

INCL 423385000; 429231950; 429231600; 429224000; 429223000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT 11105-01-4P, Silicon nitride oxide 71330-02-4P, Titanium nitride oxide (TiNO) 130988-77-1P, Tin nitride oxide 500215-65-6P, Titanium nitride oxide (TiN0.3O1.7) 871475-49-9P, Lithium titanium nitride oxide (Li0-2TiN0-1.4O0.1-2.2) 871475-51-3P, Cobalt lithium nitride oxide (CoLi0-2N0-1.4O0.1-2.2) 871475-53-5P, Lithium nickel nitride oxide (Li0-2NiN0-1.4O0.1-2.2) 871475-55-7P, Lithium

manganese nitride oxide (Li0-2MnN0-1.4O0.1-2.2) **871475-57-9P**
, Lithium silicon nitride oxide (Li0-2SiN0-1.4O0.1-2.2)
871475-59-1P, Germanium lithium nitride oxide
(GeLi0-2N0-1.4O0.1-2.2) 871475-61-5P, Lithium tin nitride oxide
(Li0-2SnN0-1.4O0.1-2.2) 871475-63-7P, Titanium nitride oxide
(TiN0.11O1.89) 871475-65-9P 871475-67-1P 871475-69-3P, Cobalt
lithium nitrogen oxide 871475-71-7P, Cobalt lithium nickel
nitrogen oxide 871475-73-9P, Lithium manganese nitrogen oxide
RL: DEV (Device component use); SPN (Synthetic preparation); PREP
(Preparation); USES (Uses)
(synthesis of active material for nonaq. electrolyte secondary
battery)

L17 ANSWER 4 OF 21 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:431262 HCAPLUS
DOCUMENT NUMBER: 142:484778
TITLE: Boron-lithium-phosphorus nitrogen oxide as glassy solid electrolytes for batteries and electrochemical cells
INVENTOR(S): Martin, Michel; Blandenet, Olivier
PATENT ASSIGNEE(S): Centre Stephanois De Recherches Mecaniques Hydromecanique Etfrottement, Fr.
SOURCE: Fr. Demande, 16 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2862432	A1	20050520	FR 2003-13378 <--	200311 14
FR 2862432	B1	20060210		
CA 2545269	A1	20050602	CA 2004-2545269 <--	200411 09
WO 2005050764	A1	20050602	WO 2004-FR2878 <--	200411 09

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

EP 1680829	A1	20060719	EP 2004-805421	200411 09

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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS
JP 2007514278 T 20070531 JP 2006-538895 200411 09
<--
KR 2007003767 A 20070105 KR 2006-709153 200605 11
<--
PRIORITY APPLN. INFO.: FR 2003-13378 A 200311 14
<--
WO 2004-FR2878 W 200411 09
<--

AB A glassy solid electrolyte for thin-layer-type electrochem. cells has the atomic composition Li0.20-0.50P0.05-0.15B0.001-0.20O0.35-0.50N0.02-0.18. The solid electrolyte is conveniently prepared by plasma-enhanced chemical vapor deposition, under nitrogen, of precursors (Li3PO4)a.(B2O3)b.(Li2O)c, where a ≥0.5, b ≥0.025, and c ≥0.025 (in which a + b + c = 1).

IT **851993-82-3P**, Lithium boride nitride oxide phosphide (Li0.2-0.5B0-0.2N0.02-0.18O0.35-0.5P0.05-0.15) **851993-84-5P**, Lithium boride nitride oxide phosphide (Li0.44B0.01N0.07O0.39P0.09) **851993-85-6P**, Lithium boride nitride oxide phosphide (Li0.23B0.14N0.12O0.44P0.07)
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(solid electrolyte; boron-lithium-phosphorus nitrogen oxide as glassy solid electrolytes for batteries and electrochem. cells)

RN 851993-82-3 HCAPLUS
CN Lithium boride nitride oxide phosphide (Li0.2-0.5B0-0.2N0.02-0.18O0.35-0.5P0.05-0.15) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.02 - 0.18	17778-88-0
O	0.35 - 0.5	17778-80-2
P	0.05 - 0.15	7723-14-0
B	0 - 0.2	7440-42-8
Li	0.2 - 0.5	7439-93-2

RN 851993-84-5 HCAPLUS
CN Lithium boride nitride oxide phosphide (Li0.44B0.01N0.07O0.39P0.09) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.07	17778-88-0
O	0.39	17778-80-2
P	0.09	7723-14-0
B	0.01	7440-42-8
Li	0.44	7439-93-2

RN 851993-85-6 HCAPLUS
CN Lithium boride nitride oxide phosphide (Li0.23B0.14N0.12O0.44P0.07) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.12	17778-88-0
O	0.44	17778-80-2
P	0.07	7723-14-0
B	0.14	7440-42-8
Li	0.23	7439-93-2

IC ICM H01M004-58
ICS C03C003-19; C23C014-08
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 57
IT 839073-70-0P, Boron lithium nitrogen phosphorus oxide
851993-82-3P, Lithium boride nitride oxide phosphide (Li0.2-0.5B0-0.2N0.02-0.18O0.35-0.5P0.05-0.15) **851993-84-5P**, Lithium boride nitride oxide phosphide (Li0.44B0.01N0.07O0.39P0.09) **851993-85-6P**, Lithium boride nitride oxide phosphide (Li0.23B0.14N0.12O0.44P0.07)
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(solid electrolyte; boron-lithium-phosphorus nitrogen oxide as glassy solid electrolytes for batteries and electrochem. cells)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 5 OF 21 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:16061 HCAPLUS
DOCUMENT NUMBER: 142:97543
TITLE: Solid electrolyte and all-solid battery
INVENTOR(S): Ugaji, Masaya; Mino, Shinji; Shibano, Yasuyuki; Ito, Shuji
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005001983	A1	20050106	WO 2004-JP9302	200406 24

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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,

AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

JP 2005038843	A	20050210	JP 2004-186806	200406 24
			<--	
JP 3677508	B2	20050803		
EP 1667272	A1	20060607	EP 2004-746771	200406 24
			<--	
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
CN 1795577	A	20060628	CN 2004-80014739	200406 24
			<--	
US 2006210882	A1	20060921	US 2005-553208	200510 13
			<--	
PRIORITY APPLN. INFO.:			JP 2003-184625 A	200306 27
			<--	
			WO 2004-JP9302 W	200406 24
			<--	

AB The title solid electrolyte can be represented by the following general formula: LiaPbMcOdNe (wherein M represents at least one element selected from the group consisting of Si, B, Ge, Al, C, Ga and S; and a, b, c, d and e resp. satisfy a = 0.62-4.98, b = 0.01-0.99, c = 0.01-0.99, d = 1.070-3.985, e = 0.01-0.50, and b + c = 1.0). This solid electrolyte is used for preparation of all solid battery and is characterized by having high resistance to humidity.

IT **816416-33-8 816416-35-0 816416-37-2**
816416-39-4 816416-41-8 816416-43-0
816416-45-2, Aluminum lithium nitride oxide phosphate (Al0.2Li3.2N0.3O0.25(PO4)0.8) **816416-47-4**
816416-49-6 816416-51-0 816416-53-2
816416-55-4 816416-57-6 816416-61-2
816416-63-4, Lithium nitride oxide phosphate silicate (Li3.4N0.3O0.05(PO4)0.4(SiO3)0.6) **816416-65-6**, Lithium nitride oxide phosphate silicate (Li3.7N0.3O0.35(PO4)0.1(SiO3)0.9) **816416-67-8**, Lithium nitride oxide phosphate silicate (Li3.79N0.3O0.44(PO4)0.01(SiO3)0.99) **816416-69-0**
816416-71-4 816416-75-8 816416-77-0
816416-79-2 816416-81-6, Lithium nitride oxide phosphate silicate (Li3N0.01O0.08(PO4)0.8(SiO3)0.2)
816416-82-7 816416-85-0 816416-87-2
816416-88-3 816416-89-4
RL: TEM (Technical or engineered material use); USES (Uses)
(solid electrolyte for preparation of all-solid battery)

RN 816416-33-8 HCAPLUS

CN Lithium metaphosphate nitride oxide silicate (Li3(PO3)0.8N0.3O0.25(SiO4)0.2) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.25	17778-80-2
O4Si	0.2	17181-37-2
O3P	0.8	15389-19-2
Li	3	7439-93-2

RN 816416-35-0 HCAPLUS
CN Lithium metaphosphate nitride oxide silicate (Li2.6(PO3)0.8N0.3O0.05(SiO4)0.2) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.05	17778-80-2
O4Si	0.2	17181-37-2
O3P	0.8	15389-19-2
Li	2.6	7439-93-2

RN 816416-37-2 HCAPLUS
CN Lithium borate metaphosphate nitride oxide (Li2.4(BO3)0.2(PO3)0.8N0.3O0.05) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.05	17778-80-2
O3P	0.8	15389-19-2
BO3	0.2	14213-97-9
Li	2.4	7439-93-2

RN 816416-39-4 HCAPLUS
CN Germanium lithium nitride oxide phosphate (Ge0.2Li2.6N0.3O0.05(PO4)0.8) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.05	17778-80-2
O4P	0.8	14265-44-2
Ge	0.2	7440-56-4
Li	2.6	7439-93-2

RN 816416-41-8 HCAPLUS
CN Germanium lithium nitride oxide phosphate (Ge0.2Li3N0.3O0.25(PO4)0.8) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.25	17778-80-2
O4P	0.8	14265-44-2
Ge	0.2	7440-56-4
Li	3	7439-93-2

RN 816416-43-0 HCAPLUS
CN Aluminum lithium metaphosphate nitride oxide (Al0.2Li2.4(PO3)0.8N0.3O0.65) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.65	17778-80-2
O3P	0.8	15389-19-2
Li	2.4	7439-93-2
Al	0.2	7429-90-5

RN 816416-45-2 HCAPLUS
CN Aluminum lithium nitride oxide phosphate (Al0.2Li3.2N0.3O0.25(PO4)0.8) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.25	17778-80-2
O4P	0.8	14265-44-2
Li	3.2	7439-93-2
Al	0.2	7429-90-5

RN 816416-47-4 HCAPLUS
CN Lithium carbonate metaphosphate nitride oxide (Li2.6(CO3)0.2(PO3)0.8N0.3O0.25) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.25	17778-80-2
O3P	0.8	15389-19-2
Li	2.6	7439-93-2
CO3	0.2	3812-32-6

RN 816416-49-6 HCAPLUS
CN Gallium lithium metaphosphate nitride oxide (Ga0.2Li2.4(PO3)0.8N0.3O0.65) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.65	17778-80-2
O3P	0.8	15389-19-2
Ga	0.2	7440-55-3
Li	2.4	7439-93-2

RN 816416-51-0 HCAPLUS
CN Lithium metaphosphate nitride oxide sulfate (Li2.6(PO3)0.8N0.3O0.25(SO4)0.2) (CA INDEX NAME)

Component	Ratio	Component Registry Number

N	0.3	17778-88-0
O	0.25	17778-80-2
O3P	0.8	15389-19-2
O4S	0.2	14808-79-8
Li	2.6	7439-93-2

RN 816416-53-2 HCAPLUS
CN Lithium metaphosphate nitride oxide silicate (Li2.81(PO3)0.99N0.3O0.44(SiO4)0.01) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.44	17778-80-2
O4Si	0.01	17181-37-2
O3P	0.99	15389-19-2
Li	2.81	7439-93-2

RN 816416-55-4 HCAPLUS
CN Lithium metaphosphate nitride oxide silicate (Li2.85(PO3)0.95N0.3O0.4(SiO4)0.05) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.4	17778-80-2
O4Si	0.05	17181-37-2
O3P	0.95	15389-19-2
Li	2.85	7439-93-2

RN 816416-57-6 HCAPLUS
CN Lithium metaphosphate nitride oxide silicate (Li2.9(PO3)0.9N0.3O0.35(SiO4)0.1) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.35	17778-80-2
O4Si	0.1	17181-37-2
O3P	0.9	15389-19-2
Li	2.9	7439-93-2

RN 816416-61-2 HCAPLUS
CN Lithium metaphosphate nitride oxide silicate (Li3.3(PO3)0.5N0.3O0.45(SiO3)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.45	17778-80-2
O3Si	0.5	15593-90-5
O3P	0.5	15389-19-2
Li	3.3	7439-93-2

RN 816416-63-4 HCAPLUS
CN Lithium nitride oxide phosphate silicate

(Li3.4N0.3O0.05(PO4)0.4(SiO3)0.6) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.05	17778-80-2
O3Si	0.6	15593-90-5
O4P	0.4	14265-44-2
Li	3.4	7439-93-2

RN 816416-65-6 HCAPLUS
CN Lithium nitride oxide phosphate silicate
(Li3.7N0.3O0.35(PO4)0.1(SiO3)0.9) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.35	17778-80-2
O3Si	0.9	15593-90-5
O4P	0.1	14265-44-2
Li	3.7	7439-93-2

RN 816416-67-8 HCAPLUS
CN Lithium nitride oxide phosphate silicate
(Li3.79N0.3O0.44(PO4)0.01(SiO3)0.99) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.44	17778-80-2
O3Si	0.99	15593-90-5
O4P	0.01	14265-44-2
Li	3.79	7439-93-2

RN 816416-69-0 HCAPLUS
CN Germanium lithium metaphosphate nitride oxide
(Ge0.01Li2.81(PO3)0.99N0.3O0.48) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.48	17778-80-2
O3P	0.99	15389-19-2
Ge	0.01	7440-56-4
Li	2.81	7439-93-2

RN 816416-71-4 HCAPLUS
CN Germanium lithium metaphosphate nitride oxide
(Ge0.1Li2.9(PO3)0.9N0.3O0.75) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.75	17778-80-2
O3P	0.9	15389-19-2

Ge	0.1	7440-56-4
Li	2.9	7439-93-2

RN 816416-75-8 HCAPLUS
CN Germanium lithium nitride oxide phosphate (Ge0.5Li3.3N0.3O1.45(PO4)0.5) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.45	17778-80-2
O4P	0.5	14265-44-2
Ge	0.5	7440-56-4
Li	3.3	7439-93-2

RN 816416-77-0 HCAPLUS
CN Germanium lithium nitride oxide phosphate (Ge0.6Li3.4N0.3O1.85(PO4)0.4) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	1.85	17778-80-2
O4P	0.4	14265-44-2
Ge	0.6	7440-56-4
Li	3.4	7439-93-2

RN 816416-79-2 HCAPLUS
CN Germanium lithium nitride oxide phosphate (Ge0.99Li3.79N0.3O3.41(PO4)0.01) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	3.41	17778-80-2
O4P	0.01	14265-44-2
Ge	0.99	7440-56-4
Li	3.79	7439-93-2

RN 816416-81-6 HCAPLUS
CN Lithium nitride oxide phosphate silicate (Li3N0.01O0.08(PO4)0.8(SiO3)0.2) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.01	17778-88-0
O	0.08	17778-80-2
O3Si	0.2	15593-90-5
O4P	0.8	14265-44-2
Li	3	7439-93-2

RN 816416-82-7 HCAPLUS
CN Lithium metaphosphate nitride oxide silicate (Li3(PO3)0.8N0.1O0.55(SiO4)0.2) (CA INDEX NAME)

Component	Ratio	Component

		Registry Number
N	0.1	17778-88-0
O	0.55	17778-80-2
O4Si	0.2	17181-37-2
O3P	0.8	15389-19-2
Li	3	7439-93-2

RN 816416-85-0 HCAPLUS
CN Lithium metaphosphate nitride oxide silicate (Li3(PO3)0.8N0.5O0.15(SiO3)0.2) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.5	17778-88-0
O	0.15	17778-80-2
O3Si	0.2	15593-90-5
O3P	0.8	15389-19-2
Li	3	7439-93-2

RN 816416-87-2 HCAPLUS
CN Germanium lithium metaphosphate nitride oxide silicate (Ge0.1Li3(PO3)0.8N0.3O0.65(SiO4)0.1) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.65	17778-80-2
O4Si	0.1	17181-37-2
O3P	0.8	15389-19-2
Ge	0.1	7440-56-4
Li	3	7439-93-2

RN 816416-88-3 HCAPLUS
CN Germanium lithium borate metaphosphate nitride oxide (Ge0.1Li2.7(BO3)0.1(PO3)0.8N0.3O0.55) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.55	17778-80-2
O3P	0.8	15389-19-2
BO3	0.1	14213-97-9
Ge	0.1	7440-56-4
Li	2.7	7439-93-2

RN 816416-89-4 HCAPLUS
CN Aluminum lithium borate nitride oxide phosphate (Al0.1Li3(BO2)0.1N0.3O0.05(PO4)0.8) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.3	17778-88-0
O	0.05	17778-80-2
O4P	0.8	14265-44-2
BO2	0.1	14100-65-3

Li	3	7439-93-2
Al	0.1	7429-90-5

IC ICM H01M010-36
ICS H01B001-06; H01M006-18
CC 52-3 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 72
IT 7440-06-4, Platinum, uses **816416-33-8 816416-33-8**
816416-35-0 816416-37-2 816416-39-4
816416-41-8 816416-41-8 816416-43-0
816416-43-0 816416-45-2, Aluminum lithium nitride
oxide phosphate (Al0.2Li3.2N0.3O0.25(PO4)0.8) **816416-47-4**
816416-49-6 816416-51-0 816416-53-2
816416-55-4 816416-57-6 816416-61-2
816416-63-4, Lithium nitride oxide phosphate silicate
(Li3.4N0.3O0.05(PO4)0.4(SiO3)0.6) **816416-65-6**, Lithium
nitride oxide phosphate silicate (Li3.7N0.3O0.35(PO4)0.1(SiO3)0.9)
816416-67-8, Lithium nitride oxide phosphate silicate
(Li3.79N0.3O0.44(PO4)0.01(SiO3)0.99) **816416-69-0**
816416-71-4 816416-75-8 816416-77-0
816416-79-2 816416-81-6, Lithium nitride oxide
phosphate silicate (Li3N0.01O0.08(PO4)0.8(SiO3)0.2)
816416-82-7 816416-85-0 816416-87-2
816416-88-3 816416-89-4
RL: TEM (Technical or engineered material use); USES (Uses)
(solid electrolyte for preparation of all-solid battery)
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 6 OF 21 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:852189 HCAPLUS
DOCUMENT NUMBER: 142:65390
TITLE: Optical recording medium containing cobalt complex in dye layer for increased oxidation resistance
INVENTOR(S): Kim, Hwan Kun; Lee, Ki Taek; Park, Jong Jin; Kim, Jae Hwan
PATENT ASSIGNEE(S): Hansol Paper Co., Ltd, S. Korea
SOURCE: Repub. Korea, No pp. given
CODEN: KRXXFC
DOCUMENT TYPE: Patent
LANGUAGE: Korean
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
KR 180890	B1	19990401	KR 1996-65463	19961213

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PRIORITY APPLN. INFO.: KR 1996-65463 19961213

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AB Antioxidant optical recording medium are provided, to improve the durability and humidity resistance of a recording layer, thereby to improve the reliability of data storage. The antioxidant optical

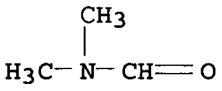
recording medium comprises a substrate; an organic dye recording layer; a reflection layer; and a protection layer, wherein the organic dye recording layer comprises 0.1-20 wt% of a cobalt compound based on the weight of the dye of the recording layer for improving oxidation resistance, and an organic dye. Preferably the cobalt compound is represented by the formula: AmCo(CN)n·(DMF)l, wherein A is Li+, Na+ or Cs+; m, n and l are independently an integer of 0-10; and DMF represents N,N-dimethylformamide.

IT **808132-02-7**
RL: TEM (Technical or engineered material use); USES (Uses)
(optical recording medium increasing antioxidization)

RN 808132-02-7 HCAPLUS
CN Formamide, N,N-dimethyl-, compd. with cobalt lithium cyanide (CoLi0-10(CN)0-10) (9CI) (CA INDEX NAME)

CM 1

CRN 68-12-2
CMF C3 H7 N O



CM 2

CRN 808128-24-7
CMF C N . Co . Li
CCI TIS

CM 3

CRN 7440-48-4
CMF Co

Co

CM 4

CRN 7439-93-2
CMF Li

Li

CM 5

CRN 57-12-5
CMF C N

$^{-}C\equiv N$

IC ICM B41M005-28
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT **808132-02-7** 808132-03-8 808132-04-9
RL: TEM (Technical or engineered material use); USES (Uses)
(optical recording medium increasing antioxidization)

L17 ANSWER 7 OF 21 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:593859 HCAPLUS
DOCUMENT NUMBER: 142:345783
TITLE: Lithium Ion Conducting Lithium Sulfur Oxynitride Thin Film
AUTHOR(S): Joo, K.-H.; Sohn, H.-J.; Vinatier, P.; Pecquenard, B.; Levasseur, A.
CORPORATE SOURCE: Research Center for Energy Conversion and Storage, School of Materials Science and Engineering, Seoul National University, Seoul, 151-742, S. Korea
SOURCE: Electrochemical and Solid-State Letters (**2004**), 7(8), A256-A258
CODEN: ESLEF6; ISSN: 1099-0062
PUBLISHER: Electrochemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Thin-film solid electrolytes, Li S oxynitride (Lison), were fabricated by radiofrequency (rf) magnetron sputtering under various gas compns. Composition of the thin film was determined by atomic absorption spectroscopy, Rutherford backscattering spectroscopy, and energy-dispersive x-ray spectrometry. The ionic conductivity of the thin film at room temperature showed a maximum of 2 + 10-5 S/cm for Li0.29S0.28O0.35N0.09. Microstructure of Lison thin films shows an amorphous nature when deposited under N atmospheric The electrolyte was stable up to 5.5 V vs. Li/Li+.
IT **848476-04-0P**, Lithium 29, nitrogen 9, oxygen 35, sulfur 28 (atomic) **848476-07-3P**, Lithium 29, nitrogen 5, oxygen 38, sulfur 28 (atomic)
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(properties of lithium sulfide oxynitride ionic conductors prepared by sputtering)
RN 848476-04-0 HCAPLUS
CN Lithium nitride oxide sulfide (Li0.29N0.09O0.35S0.28) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.09	17778-88-0
O	0.35	17778-80-2
S	0.28	7704-34-9
Li	0.29	7439-93-2

RN 848476-07-3 HCAPLUS
CN Lithium nitride oxide sulfide (Li0.29N0.05O0.38S0.28) (9CI) (CA

INDEX NAME)

Component	Ratio	Component Registry Number
N	0.05	17778-88-0
O	0.38	17778-80-2
S	0.28	7704-34-9
Li	0.29	7439-93-2

CC 76-2 (Electric Phenomena)
Section cross-reference(s): 52

IT **848476-04-0P**, Lithium 29, nitrogen 9, oxygen 35, sulfur 28 (atomic) 848476-05-1P, Lithium 29, oxygen 53, sulfur 18 (atomic) 848476-06-2P, Lithium 29, oxygen 60, sulfur 11 (atomic) **848476-07-3P**, Lithium 29, nitrogen 5, oxygen 38, sulfur 28 (atomic)
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(properties of lithium sulfide oxynitride ionic conductors prepared by sputtering)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 8 OF 21 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:207088 HCAPLUS
DOCUMENT NUMBER: 141:250440
TITLE: Optical Investigations of the Effect of Gradual Substitution NH4 → Cs on the Ferroelastic Phase Transition in a CsLiSO4 Crystal
AUTHOR(S): Mel'nikova, S. V.; Grankina, V. A.
CORPORATE SOURCE: Siberian Division, Kirensky Institute of Physics, Russian Academy of Sciences, Krasnoyarsk, 660036, Russia
SOURCE: Physics of the Solid State (Translation of Fizika Tverdogo Tela (Sankt-Peterburg)) (**2004**), 46(3), 515-520
CODEN: PSOSED; ISSN: 1063-7834
PUBLISHER: MAIK Nauka/Interperiodica Publishing
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Crystals of Csx(NH4)1-xLiSO4 ($0.39 \leq x \leq 1.0$) solid solns. are grown and investigated using polarized light microscopy and measurements of the birefringence in the temperature range 100-530 K. The (x-T) phase diagram of the Csx(NH4)1-xLiSO4 solid solns. is constructed. Upon substitution of ammonium for cesium in the CsLiSO4 crystal, the phase transition temperature gradually increases to such a degree that the ferroelastic phase can exist at room temperature The triple point of intersection of the Pmcn, P21cn, and P1121/n phase boundaries is determined It is established that the introduction of ammonium in small amts. has an unusually strong effect on the refractive properties and character of the ferroelastic phase transition in the CsLiSO4 crystal.

IT **753023-72-2**, Ammonium cesium lithium sulfate ((NH4)0.05Cs0.95Li(SO4)) **753023-74-4**, Ammonium cesium lithium sulfate ((NH4)0.29Cs0.71Li(SO4))
RL: PEP (Physical, engineering or chemical process); PRP

(Properties); PYP (Physical process); PROC (Process)
(optical properties of Csx(NH4)1-xLiSO4 solid solns. in relation to ferroelastic phase transition)

RN 753023-72-2 HCAPLUS
CN Ammonium cesium lithium sulfate ((NH4)0.05Cs0.95Li(SO4)) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4S	1	14808-79-8
H4N	0.05	14798-03-9
Cs	0.95	7440-46-2
Li	1	7439-93-2

RN 753023-74-4 HCAPLUS
CN Ammonium cesium lithium sulfate ((NH4)0.29Cs0.71Li(SO4)) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4S	1	14808-79-8
H4N	0.29	14798-03-9
Cs	0.71	7440-46-2
Li	1	7439-93-2

CC 73-2 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 68, 75
IT 13499-08-6, Cesium lithium sulfate (CsLiSO4) 753023-42-6
753023-72-2, Ammonium cesium lithium sulfate ((NH4)0.05Cs0.95Li(SO4)) 753023-73-3 **753023-74-4**, Ammonium cesium lithium sulfate ((NH4)0.29Cs0.71Li(SO4))
753023-75-5 753023-77-7, Ammonium cesium lithium sulfate ((NH4)0.61Cs0.39Li(SO4))
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(optical properties of Csx(NH4)1-xLiSO4 solid solns. in relation to ferroelastic phase transition)
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 9 OF 21 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:427916 HCAPLUS
DOCUMENT NUMBER: 139:189923
TITLE: Structural and vibrational studies of Li[Kx(NH4)1-x]SO4 and Li2KNH4(SO4)2 mixed crystals
AUTHOR(S): Mata, Jorge; Solans, Xavier; Molera, Judit
CORPORATE SOURCE: Departament de Cristallografia, Universitat de Barcelona, Barcelona, E-08028, Spain
SOURCE: Journal of Solid State Chemistry (**2003**), 173(1), 69-77
CODEN: JSSCBI; ISSN: 0022-4596
PUBLISHER: Elsevier Science
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Mixed crystals of Li[Kx(NH4)1-x]SO4 were obtained by evaporation from aqueous

solution at 313 K using different molar ratios of mixts. of LiKSO4 and LiNH4SO4. The crystals were characterized by Raman scattering and single-crystal and powder x-ray diffraction. Two types of compound were obtained: Li[Kx(NH4)1-x]SO4 with x ≥ 0.94 and Li2KNH4(SO4)2. Different phases of Li[Kx(NH4)1-x]SO4 were yielded according to the molar ratio used in the preparation The 1st phase is isostructural to the room-temperature phase of LiKSO4. The 2nd phase is the enantiomorph of the 1st, which is not observed in pure LiKSO4, and the last is a disordered phase, which was also observed in LiKSO4, and can be assumed as a mixture of domains of two preceding phases. In the 2nd type of compound Li2KNH4(SO4)2, the room-temperature phase is hexagonal, symmetry space group P63 with cell-volume nine times that of LiKSO4. In this phase, some cavities are occupied by K+ ions only, and others are occupied by either K+ or NH4+ at random. Thermal analyses of both types of compds. were performed by DSC, ATD, TG and powder x-ray diffraction. The phase transition temps. for Li[Kx(NH4)1-x]SO4 x ≥ 0.94 were affected by the random presence of the ammonium ion in this disordered system. The high-temperature phase of Li2KNH4(SO4)2 is also hexagonal, space group P63/mmc with the cell a-parameter double that of LiKSO4. The phase transition is at 471.9 K.

IT **280586-66-5P**, Ammonium lithium potassium sulfate ((NH4)0.03LiK0.97(SO4)) **578707-47-8P**, Ammonium lithium potassium sulfate ((NH4)0.07LiK0.93(SO4))
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and crystal structure of)

RN 280586-66-5 HCAPLUS
CN Ammonium lithium potassium sulfate ((NH4)0.03LiK0.97(SO4)) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4S	1	14808-79-8
H4N	0.03	14798-03-9
K	0.97	7440-09-7
Li	1	7439-93-2

RN 578707-47-8 HCAPLUS
CN Ammonium lithium potassium sulfate ((NH4)0.07LiK0.93(SO4)) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4S	1	14808-79-8
H4N	0.07	14798-03-9
K	0.93	7440-09-7
Li	1	7439-93-2

IT **264615-51-2P**, Ammonium lithium potassium sulfate ((NH4)0.06LiK0.94(SO4)) **578707-51-4P**, Ammonium lithium potassium sulfate ((NH4)0-0.06LiK0.94-1(SO4))
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and phase transition temps. vs. ammonium ion concentration in)

RN 264615-51-2 HCAPLUS
CN Ammonium lithium potassium sulfate ((NH4)0.06LiK0.94(SO4)) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4S	1	14808-79-8
H4N	0.06	14798-03-9
K	0.94	7440-09-7
Li	1	7439-93-2

RN 578707-51-4 HCAPLUS
CN Ammonium lithium potassium sulfate ((NH4)0-0.06LiK0.94-1(SO4)) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4S	1	14808-79-8
H4N	0 - 0.06	14798-03-9
K	0.94 - 1	7440-09-7
Li	1	7439-93-2

CC 78-5 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
IT **280586-66-5P**, Ammonium lithium potassium sulfate ((NH4)0.03LiK0.97(SO4)) **578707-47-8P**, Ammonium lithium potassium sulfate ((NH4)0.07LiK0.93(SO4))
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and crystal structure of)
IT **264615-51-2P**, Ammonium lithium potassium sulfate ((NH4)0.06LiK0.94(SO4)) **578707-51-4P**, Ammonium lithium potassium sulfate ((NH4)0-0.06LiK0.94-1(SO4))
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and phase transition temps. vs. ammonium ion concentration in)
REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 10 OF 21 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:337575 HCAPLUS
DOCUMENT NUMBER: 133:97619
TITLE: Study on the low-temperature dielectric behavior of LiKSO4 crystal and a Li(NH4)0.03K0.97SO4 mixed crystal
AUTHOR(S): Shin, H. K.; Park, J. M.; Lee, Y. S.
CORPORATE SOURCE: Dept. of Physics, Daejin University, Pocheon, Kyunggi, 487-711, S. Korea
SOURCE: Sae Mulli (**1999**), 39(3), 203-207
CODEN: NWPYA4; ISSN: 0374-4914
PUBLISHER: Korean Physical Society
DOCUMENT TYPE: Journal
LANGUAGE: Korean
AB LiKSO4 and Li(NH4)0.03K0.97SO4 crystals have been studied by using dielec. measurements at two different measuring frequencies in the range of temperature from 100 K to 270 K along the c axis. A specific thermal treatment was applied to the LiKSO4 sample. In contrast with the previous results, the dielec. anomaly expected from the phase transition around 250 K was not observed For Li(NH4)0.03K0.97SO4, no thermal treatment was used; in spite of

that, no nonreproducibility and no thermal hysteresis were observed in the exptl. results. The broadened dielec. anomaly observed in the dielec. constant ε'c of Li(NH4)0.03K0.97SO4 was analyzed and was ascribed to a contribution from the motion of multiple domain walls.

IT **280586-66-5**, Ammonium lithium potassium sulfate ((NH4)0.03LiK0.97(SO4))
RL: PRP (Properties)
(low-temperature dielec. behavior of LiKSO4 crystal and a Li(NH4)0.03K0.97SO4 mixed crystal)

RN 280586-66-5 HCAPLUS

CN Ammonium lithium potassium sulfate ((NH4)0.03LiK0.97(SO4)) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4S	1	14808-79-8
H4N	0.03	14798-03-9
K	0.97	7440-09-7
Li	1	7439-93-2

CC 76-8 (Electric Phenomena)

IT 14520-76-4, Lithium potassium sulfate **280586-66-5**, Ammonium lithium potassium sulfate ((NH4)0.03LiK0.97(SO4))
RL: PRP (Properties)
(low-temperature dielec. behavior of LiKSO4 crystal and a Li(NH4)0.03K0.97SO4 mixed crystal)

L17 ANSWER 11 OF 21 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:165726 HCAPLUS
DOCUMENT NUMBER: 132:302398
TITLE: X-ray diffraction, thermal analysis and Raman spectroscopy characterization of Li(NH4)1-xKxSO4 solid solution
AUTHOR(S): Mata, J.; Solans, X.; Calvet, T.
CORPORATE SOURCE: Departament de Cristal·lografia, Universitat de Barcelona, Barcelona, 08028, Spain
SOURCE: Boletin de la Sociedad Espanola de Ceramica y Vidrio (**1999**), 38(5), 451-454
CODEN: BSCVB9; ISSN: 0366-3175
PUBLISHER: Sociedad Espanola de Ceramica y Vidrio
DOCUMENT TYPE: Journal
LANGUAGE: Spanish

AB The preparation and characterization of mixed crystals Li(NH4)1-xKxSO4 was carried out. The characterization was by thermal anal., x-ray diffraction on powder and single crystal samples at variable temperature and Raman spectroscopy at variable temperature Two phases were obtained. One is a solid solution (data reported for x = 0.94) with 0.94 < x < 1, with the same phases as those observed in LiKSO4, but also with new phases which can be obtained according to the crystallization process. The 2nd type of compound has the formula Li(NH4)0.53K0.47SO4, with an hexagonal structure (a ≈ 3 aLiKSO4). This compound has a phase transition at 463K.

IT **264615-51-2P**, Ammonium lithium potassium sulfate ((NH4)0.06LiK0.94(SO4))
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and crystal structure of polymorphs of)

RN 264615-51-2 HCAPLUS
CN Ammonium lithium potassium sulfate ((NH4)0.06LiK0.94(SO4)) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4S	1	14808-79-8
H4N	0.06	14798-03-9
K	0.94	7440-09-7
Li	1.	7439-93-2

CC 78-6 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 73, 75
IT **264615-51-2P**, Ammonium lithium potassium sulfate ((NH4)0.06LiK0.94(SO4))
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and crystal structure of polymorphs of)
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 12 OF 21 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:171216 HCAPLUS
DOCUMENT NUMBER: 130:274333
TITLE: Investigation of phase transitions in Lit1-x(NH4)xSO4 mixed crystal
AUTHOR(S): Freire, P. T. C.; Paraguassu, W.; Silva, A. P.; Pilla, O.; Teixeira, A. M. R.; Sasaki, J. M.; Mendes Filho, J.; Guedes, I.; Melo, F. E. A.
CORPORATE SOURCE: Departmento de Fisica. Universidade Federal do Ceara, Fortaleza, CE 60455-760, Brazil
SOURCE: Solid State Communications (**1999**), 109(8), 507-511
CODEN: SSCOA4; ISSN: 0038-1098
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Raman scattering results on LiK1-x(NH4)xSO4 mixed crystal for temps. between 100 and 300 K are presented. In this temperature range the crystal undergoes two different phase transitions, which the authors call Bansal and Tomaszewski phase transitions. The introduction of ammonium ions in the K sites increases the C66 → C3v4 (Bansal) phase transition temperature and decreases the Tomaszewski phase transition temperature Finally, the most impressive effect of the presence of ammonium impurity in the LiKSO4 structure is the decrease in the temperature hysteresis of Bansal phase transition and the almost complete destruction of hysteresis in the Tomaszewski phase transition, leading to a high temperature range of stability of the trigonal phase.
IT **222056-72-6**, Ammonium lithium potassium sulfate ((NH4)0.04LiK0.96(SO4))
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(phase transitions in)
RN 222056-72-6 HCAPLUS
CN Ammonium lithium potassium sulfate ((NH4)0.04LiK0.96(SO4)) (CA INDEX NAME)

Component	Ratio	Component

		Registry Number
O4S	1	14808-79-8
H4N	0.04	14798-03-9
K	0.96	7440-09-7
Li	1	7439-93-2

CC 75-7 (Crystallography and Liquid Crystals)
Section cross-reference(s): 73
IT **222056-72-6**, Ammonium lithium potassium sulfate ((NH4)0.04LiK0.96(SO4))
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(phase transitions in)
REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 13 OF 21 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1997:591394 HCAPLUS
DOCUMENT NUMBER: 127:309446
TITLE: Electrochemical analysis of thin film electrolytes and electrodes for application in rechargeable all solid state lithium microbatteries
AUTHOR(S): Birke, P.; Weppner, W.
CORPORATE SOURCE: Chair for Sensors and Solid State Ionics, Christian-Albrechts-Univ., Kiel, D-24143, Germany
SOURCE: Electrochimica Acta (**1997**), 42(20-22), 3375-3384
CODEN: ELCAAV; ISSN: 0013-4686
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The suitability of two important electrochem. exptl. methods, impedance spectroscopy and coulometric titration of ion insertion and extraction compds., has been examined for the investigation of thin film electrolytes and electrodes. These solid electrolytes and electrodes are employed in rechargeable lithium microbatteries which may be integrated into microchips and may serve as power sources for microstructures such as micromotors fabricated by the LIGA technique. Thin solid lithium electrolyte films with thicknesses of the order of 1 μm have been rf-sputtered from a 4" + 1/4" uniaxially hot pressed LiBO2 target. The ionic conductivity σ of the resulting thin solid electrolyte films and their activation energy EA have been determined by impedance spectroscopy. The investigation of thin solid electrolyte films required the development of a special exptl. setup. Thin electrode films with thicknesses in the range of several hundred nm were sputtered from 4" + 1/4" uniaxially hot pressed C and Li4Fe0.5Ti4.5O11.75 targets. Coulometric titration expts. allow us to conclude that lithium can be reversibly inserted into and extracted from bulk graphite like carbon according to Li + 6C → LiC6 at nearly 0 V vs Li while in the case of bulk Li4Fe0.5Ti4.5O11.75 2.5 Li per formula unit can be reversibly inserted and extracted at 2.3 V vs Li according to the reduction of iron and at 1.55 V vs Li due to the reduction of titanium. In the present paper we present the effect of thin film electrodes on coulometric titrn curves.
IT **197395-46-3**, Boron lithium nitride oxide (BLiN0.09O1.86)
RL: DEV (Device component use); USES (Uses)

(electrochem. anal. of thin film electrolytes and electrodes for application in rechargeable all solid state lithium microbatteries)

RN 197395-46-3 HCAPLUS
CN Boron lithium nitride oxide (BLiN0.09O1.86) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0.09	17778-88-0
O	1.86	17778-80-2
B	1	7440-42-8
Li	1	7439-93-2

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 72
IT 12192-58-4, Graphite lithium c6li 13453-69-5, Boron lithium oxide blio2 **197395-46-3**, Boron lithium nitride oxide (BLiN0.09O1.86)
RL: DEV (Device component use); USES (Uses)
(electrochem. anal. of thin film electrolytes and electrodes for application in rechargeable all solid state lithium microbatteries)
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 14 OF 21 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1996:634666 HCAPLUS
DOCUMENT NUMBER: 125:280140
TITLE: Foaming inorganic crystals and paints containing them as flame retardants or pigments
INVENTOR(S): Kani, Yoshihiro; Kato, Chika
PATENT ASSIGNEE(S): Taihei Chem Ind, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08198609	A	19960806	JP 1995-42278	19950123

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PRIORITY APPLN. INFO.: JP 1995-42278 19950123

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AB The crystals comprise, as main component, Al basic phosphate-phosphite double salts having a formula AlxM1y1M2y2...MiyiZnz(PO4)A(HPO3)3(OH)BnH2O (M1, M2..Mi = ammonium, alkali metal; 1 ≤ x <4; M1 = 0-6; M2 = 0-6; Mi = 0-6; Z = 0-3; (y1 + y2 + ...+ yi + 2z)/x = 0.05-2; (3x + y1 + y2 + ... + yi + 2z) = 6-12; A = 0.1-1.0; B 0.3-3.0; n = 0-6), and optionally borates and/or silicates. Paints containing the crystals are also claimed.
IT **182442-70-2P**

RL: PNU (Preparation, unclassified); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(foaming crystal from basic Al phosphate phosphite (and borate or silicate) for pigment or fireproofing agent in paint)

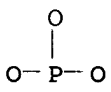
RN 182442-70-2 HCAPLUS
CN Aluminum ammonium lithium hydroxide phosphate phosphonate (Al2.8(NH4)0.5Li0.25(OH)(PO4)0.75(HPO3)3), hydrate (10:13) (9CI) (CA INDEX NAME)

CM 1

CRN 182442-69-9
CMF Al . H4 N . H O3 P . H O . Li . O4 P
CCI TIS

CM 2

CRN 15477-76-6
CMF H O3 P



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 3

CRN 14798-03-9
CMF H4 N

NH_4^+

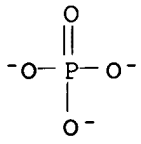
CM 4

CRN 14280-30-9
CMF H O

OH^-

CM 5

CRN 14265-44-2
CMF O4 P



CM 6

CRN 7439-93-2
CMF Li

Li

CM 7

CRN 7429-90-5
CMF Al

Al

IC ICM C01B025-163
ICS C09D005-00; C09D005-18
CC 49-5 (Industrial Inorganic Chemicals)
Section cross-reference(s): 42
IT **182442-70-2P** 182442-72-4P 182442-74-6P 182442-76-8P 182579-26-6P
RL: PNU (Preparation, unclassified); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(foaming crystal from basic Al phosphate phosphite (and borate or silicate) for pigment or fireproofing agent in paint)

L17 ANSWER 15 OF 21 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1996:351162 HCAPLUS
DOCUMENT NUMBER: 125:45608
TITLE: Effect of cation or anion substitution in the LiNH4SO4 phase transitions
AUTHOR(S): Sarrion, M. L. Martinez; Mestres, L.; Bakkali, A.; Bocanegra, E. H.
CORPORATE SOURCE: Dpto. de Quimica Inorganica, Universidad de Barcelona, Barcelona, Spain
SOURCE: Boletin de la Sociedad Espanola de Ceramica y Vidrio (**1995**), 34(5 Y 6), 458-462
CODEN: BSCVB9; ISSN: 0366-3175
PUBLISHER: Sociedad Espanola de Ceramica y Vidrio
DOCUMENT TYPE: Journal
LANGUAGE: Spanish
AB β-LiNH4SO4 (β LAS) undergoes two phase transitions at .apprx.10° and 186°. The intermediate phase is ferroelec. The effect of the partial substitution of the NH4+ cation by Rb, and sulfate anion by selenate in β LiNH4SO4, on these phase transitions was studied. The region of existence of the

solid solns. Li(NH4)1-xRbxSO4 and LiNH4(SO4)1-x(SeO4)x in which the structure of β-LAS is maintained was established. The presence of selenate anions or Rb cations affects the temps. of both phase transitions. Therefore the tetrahedral sulfate as well as the NH4+ cations take part in these transitions. There is a cooperative effect between the disorder of the sulfate groups and the distortions of the NH4+ tetrahedra. The mechanism that best justifies these phase transitions is a order-disorder mechanism.

IT **129713-53-7**, Ammonium lithium rubidium sulfate ((NH4)0-1LiRb0-1SO4)
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(phase transitions in)

RN 129713-53-7 HCAPLUS

CN Ammonium lithium rubidium sulfate ([(NH4),Rb]Li(SO4)) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4S	1	14808-79-8
H4N	0 - 1	14798-03-9
Rb	0 - 1	7440-17-7
Li	1	7439-93-2

CC 75-7 (Crystallography and Liquid Crystals)
Section cross-reference(s): 69, 76

IT **129713-53-7**, Ammonium lithium rubidium sulfate ((NH4)0-1LiRb0-1SO4) 178156-04-2, Ammonium lithium selenate sulfate (NH4Li(SeO4)0-1(SO4)0-1)
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(phase transitions in)

L17 ANSWER 16 OF 21 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1995:233329 HCAPLUS
DOCUMENT NUMBER: 122:149977
TITLE: Ion-exchange properties of lithium aluminum layered double hydroxides
AUTHOR(S): Chisem, Ian C.; Jones, William
CORPORATE SOURCE: Dep. Chem., Univ. Cambridge, Cambridge, CB2 1EW, UK
SOURCE: Journal of Materials Chemistry (**1994**), 4(11), 1737-44
CODEN: JMACEP; ISSN: 0959-9428
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The synthesis of layered Li Al hydrotalcite-like materials is described along with different anion exchange procedures for the preparation of materials intercalated with chloride, nitrate and vanadate. The products were characterized using elemental chemical anal., powder x-ray diffraction, FTIR spectroscopy and TGA. The matrixes are reasonably stable to acid treatment at pH 4.5 for periods of up to 72 h, with anion exchange taking place. Total exchange of interlayer carbonate for chloride, nitrate and vanadate may be accomplished. The thermal properties of the materials were studied: they demonstrate interesting differences in thermal behavior compared with hydrotalcite.

IT **161186-56-7P**, Aluminum lithium hydroxide nitrate

(Al0.68Li0.32(OH)2(NO3)0.36)
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of intercalated lithium aluminum layered double hydroxides)
RN 161186-56-7 HCAPLUS
CN Aluminum lithium hydroxide nitrate (Al0.68Li0.32(OH)2(NO3)0.36) (CA INDEX NAME)

Component	Ratio	Component Registry Number
NO3	0.36	14797-55-8
HO	2	14280-30-9
Li	0.32	7439-93-2
Al	0.68	7429-90-5

CC 78-3 (Inorganic Chemicals and Reactions)
IT 68949-09-7P, Aluminum lithium chloride hydroxide (Al2LiCl(OH)6)
117872-70-5P, Aluminum lithium hydroxide nitrate (Al2Li(OH)6(NO3))
161186-56-7P, Aluminum lithium hydroxide nitrate (Al0.68Li0.32(OH)2(NO3)0.36) 161214-41-1DP, intercalation product with sodium vanadate 161214-43-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of intercalated lithium aluminum layered double hydroxides)

L17 ANSWER 17 OF 21 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1993:44281 HCAPLUS
DOCUMENT NUMBER: 118:44281
TITLE: Manufacture of α-Sialon ceramics
INVENTOR(S): Mitomo, Mamoru; Ishizawa, Kenki; Ayusawa, Nobuo; Shironita, Akira; Takai, Masamichi; Akizuki, Toshihiko
PATENT ASSIGNEE(S): National Institute for Research in Inorganic Materials, Japan; Shinagawa Refractories Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04144969	A	19920519	JP 1990-269089	19901006

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PRIORITY APPLN. INFO.: JP 1990-269089 19901006

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AB Powdered Si nitride containing ≥15 weight% β-Si3N4, AlN, and a metal M (Li, Ca, Mg, Y, or lanthanide (except La and Ce)) oxide are mixed to obtain α-Sialon Mx(Si, Al)12(O, N)16, where 0 <x ≤0.8, and the mixture is molded and sintered at 1600-2000° in a nonoxidizing atmospheric The mixture optionally contains 0.5-40 weight% oxide, nitride, carbide, or boride of a metal

which is not soluble in α-Sialon, e.g., SiO2, CeO2, ZrO2, BN, TiN, TiC, B4C, SiC, WC, CrC, TiB2, and ZrB2. High-d. α-Sialon ceramics are manufactured by using an inexpensive starting material containing a large ratio of β-Si3N4.

IT **145139-99-7P**, Aluminum lithium silicon nitride oxide ((Al,Si)12Li0.2-0.5(N,O)16)
RL: PREP (Preparation)
(α-, ceramics, manufacture of, from starting material rich in β-silicon nitride)

RN 145139-99-7 HCAPLUS

CN Aluminum lithium silicon nitride oxide ((Al,Si)12Li0.2-0.5(N,O)16) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0 - 16	17778-88-0
O	0 - 16	17778-80-2
Si	0 - 12	7440-21-3
Li	0.2 - 0.5	7439-93-2
Al	0 - 12	7429-90-5

IC ICM C04B035-58

CC 57-2 (Ceramics)

IT 51184-13-5P, Sialon 107477-72-5P, Aluminum silicon yttrium nitride oxide ((Al,Si)6Y0.1(N,O)8) 110832-41-2P, Aluminum silicon yttrium nitride oxide ((Al,Si)12Y0-0.8(N,O)16) 144276-69-7P, Aluminum silicon yttrium nitride oxide ((Al,Si)12Y0.5(N,O)16)
145139-99-7P, Aluminum lithium silicon nitride oxide ((Al,Si)12Li0.2-0.5(N,O)16) 145140-00-7P, Aluminum magnesium silicon nitride oxide ((Al,Si)12Mg0.2-0.5(N,O)16) 145359-26-8P, Aluminum calcium silicon nitride oxide ((Al,Si)12Ca0-0.8(N,O)16)
RL: PREP (Preparation)
(α-, ceramics, manufacture of, from starting material rich in β-silicon nitride)

L17 ANSWER 18 OF 21 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1992:618582 HCAPLUS

DOCUMENT NUMBER: 117:218582

TITLE: Silicon nitride structural ceramics, and their manufacture

INVENTOR(S): Ukyo, Yoshio; Wada, Shigetaka

PATENT ASSIGNEE(S): Toyota Central Research and Development Laboratories, Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04209764	A	19920731	JP 1990-338951	199011 30

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PRIORITY APPLN. INFO.: JP 1990-338951 199011

30

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AB The ceramics comprise Mx(Al, Si)12(O, N)16 (M = Li, Ca, Mg, and/or Y; 0 < x ≤ 2) and Si6-zAlzOzN8-z (0 < z ≤ 4.2; x and/or z multiple value). The process comprises mixing 2 kinds of Si3N4 powders, ≥1 of which has ≥2 different average grain sizes, and firing the mixture.

IT **124546-02-7**, Aluminum lithium silicon nitride oxide ((Al,Si)12Li0-2(N,O)16)
RL: USES (Uses)
(ceramics, for high-temperature structural components)

RN 124546-02-7 HCAPLUS

CN Aluminum lithium silicon nitride oxide ((Al,Si)12Li0-2(N,O)16) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0 - 16	17778-88-0
O	0 - 16	17778-80-2
Si	0 - 12	7440-21-3
Li	0 - 2	7439-93-2
Al	0 - 12	7429-90-5

IC ICM C04B035-58

CC 57-2 (Ceramics)

IT 51184-13-5, Aluminum silicon nitride oxide 110781-48-1, Aluminum magnesium silicon nitride oxide ((Al,Si)12Mg0-2(N,O)16) 122989-49-5, Aluminum silicon yttrium nitride oxide ((Al,Si)12Y0-2(N,O)16) 124546-01-6, Aluminum calcium silicon nitride oxide ((Al,Si)12Ca0-2(N,O)16) **124546-02-7**, Aluminum lithium silicon nitride oxide ((Al,Si)12Li0-2(N,O)16)
RL: USES (Uses)
(ceramics, for high-temperature structural components)

L17 ANSWER 19 OF 21 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1990:562959 HCAPLUS

DOCUMENT NUMBER: 113:162959

TITLE: Phase transitions in the mixed crystals lithium rubidium ammonium sulfate (LiRb1-x(NH4)xSO4)

AUTHOR(S): Kawamura, K.; Kuramashi, A.; Nakamura, H.; Kasano, H.; Mashiyama, H.; Nakanishi, S.; Itoh, H.

CORPORATE SOURCE: Fac. Sci., Yamaguchi Univ., Yamaguchi, 753, Japan

SOURCE: Ferroelectrics (**1990**), 105, 279-84
CODEN: FEROA8; ISSN: 0015-0193

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The successive phase transitions of LiRbSO4-LiNH4SO4 systems were studied by x-ray diffraction, dielec. measurement, thermal anal., and second harmonic generation detection as functions of temperature and NH4 concentration x. Although the NH4 ion is almost of the same size as the Rb ion, a small amount of NH4 reduces the transition temps. and the incommensurate and the 5-fold commensurate phases of LiRbSO4 fade out for x > 0.1. With further replacing Rb by NH4, the antiferroelec. phase of LiRbSO4 does not appear and the phase sequence is similar to LiNH4SO4 for x > 0.25. The phase diagram and the modulated structure are discussed in reference to an Ising model with long range interactions.

IT **129713-11-7**, Ammonium lithium rubidium sulfate ((NH4)0.38LiRb0.62(SO4)) **129713-53-7**, Ammonium lithium rubidium sulfate ([(NH4),Rb]Li(SO4)) **129713-54-8**, Ammonium lithium rubidium sulfate ((NH4)0.02LiRb0.98(SO4)) **129713-55-9**, Ammonium lithium rubidium sulfate ((NH4)0.27LiRb0.73(SO4))
RL: PRP (Properties)
(phase transitions in crystals of)

RN 129713-11-7 HCAPLUS
CN Ammonium lithium rubidium sulfate ((NH4)0.38LiRb0.62(SO4)) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4S	1	14808-79-8
H4N	0.38	14798-03-9
Rb	0.62	7440-17-7
Li	1	7439-93-2

RN 129713-53-7 HCAPLUS
CN Ammonium lithium rubidium sulfate ([(NH4),Rb]Li(SO4)) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4S	1	14808-79-8
H4N	0 - 1	14798-03-9
Rb	0 - 1	7440-17-7
Li	1	7439-93-2

RN 129713-54-8 HCAPLUS
CN Ammonium lithium rubidium sulfate ((NH4)0.02LiRb0.98(SO4)) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4S	1	14808-79-8
H4N	0.02	14798-03-9
Rb	0.98	7440-17-7
Li	1	7439-93-2

RN 129713-55-9 HCAPLUS
CN Ammonium lithium rubidium sulfate ((NH4)0.27LiRb0.73(SO4)) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4S	1	14808-79-8
H4N	0.27	14798-03-9
Rb	0.73	7440-17-7
Li	1	7439-93-2

CC 75-7 (Crystallography and Liquid Crystals)
Section cross-reference(s): 76

IT **129713-11-7**, Ammonium lithium rubidium sulfate ((NH4)0.38LiRb0.62(SO4)) 129713-12-8, Ammonium lithium rubidium

sulfate ((NH4)0.55LiRb0.45(SO4)) **129713-53-7**, Ammonium lithium rubidium sulfate ([(NH4),Rb]Li(SO4)) **129713-54-8**, Ammonium lithium rubidium sulfate ((NH4)0.02LiRb0.98(SO4)) **129713-55-9**, Ammonium lithium rubidium sulfate ((NH4)0.27LiRb0.73(SO4))
RL: PRP (Properties)
(phase transitions in crystals of)

L17 ANSWER 20 OF 21 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1990:41370 HCAPLUS
DOCUMENT NUMBER: 112:41370
TITLE: Sintered Sialon articles
INVENTOR(S): Ukyo, Yoshio; Wada, Shigetaka; Takatori, Kazumasa
PATENT ASSIGNEE(S): Toyota Central Research and Development Laboratories, Inc., Japan
SOURCE: Eur. Pat. Appl., 16 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 336377	A2	19891011	EP 1989-105904	19890404
			<--	
EP 336377	A3	19900117		
EP 336377	B1	19931103		
EP 336377	B2	19970716		
R: DE, FR, GB				
JP 02044066	A	19900214	JP 1989-87807	19890406
			<--	
JP 2736386	B2	19980402		
US 4978645	A	19901218	US 1989-334553	19890407
			<--	
PRIORITY APPLN. INFO.:			JP 1988-86721 A	19880407
			<--	

AB Sintered Sialon articles comprise α-Sialon and β-Sialon with the ratio of their X-ray diffraction peak strengths = (0.05-0.5):(0.5-0.95) and average crystal grain size ≤2.0 μm for α-Sialon and ≤5.0 μm for β-Sialon in major axis and ≤1.0 μm in minor axis. The α-Sialon is Mx(Si,Al)12(O,N)16 where 0 <x ≤2 and M is ≥1 Li, Mg, Ca, and Y; and β-Sialon is Si6-yAlyOyN8-y with 0 <y ≤4.2. The articles hvae high strength and toughness, is resistant to oxidation, and can be used as a high-temperature structural material.

IT **124546-02-7**, Aluminum lithium silicon nitride oxide ((Al,Si)12Li0-2(N,O)16)
RL: USES (Uses)

(ceramics containing β-Sialon and, with small crystal grain size, for strength and toughness and oxidation resistance)

RN 124546-02-7 HCAPLUS
CN Aluminum lithium silicon nitride oxide ((Al,Si)12Li0-2(N,O)16) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
N	0 - 16	17778-88-0
O	0 - 16	17778-80-2
Si	0 - 12	7440-21-3
Li	0 - 2	7439-93-2
Al	0 - 12	7429-90-5

IC ICM C04B035-58
CC 57-2 (Ceramics)
IT 110781-48-1, Aluminum magnesium silicon nitride oxide ((Al,Si)12Mg0-2(N,O)16) 122989-49-5, Aluminum silicon yttrium nitride oxide ((Al,Si)12Y0-2(N,O)16) 124546-00-5, Aluminum silicon yttrium nitride oxide ((Al,Si)12Y0.3-0.6(N,O)16) 124546-01-6, Aluminum calcium silicon nitride oxide ((Al,Si)12Ca0-2(N,O)16) **124546-02-7**, Aluminum lithium silicon nitride oxide ((Al,Si)12Li0-2(N,O)16)
RL: USES (Uses)
(ceramics containing β-Sialon and, with small crystal grain size, for strength and toughness and oxidation resistance)

L17 ANSWER 21 OF 21 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1990:11016 HCAPLUS
DOCUMENT NUMBER: 112:11016
TITLE: Manufacture of sintered Sialon-based articles
INVENTOR(S): Nakayasu, Tetsuo; Kamitoku, Yasuhiko
PATENT ASSIGNEE(S): Ube Industries, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63319269	A	19881227	JP 1987-151057	198706 19
			<--	
JP 04061834	B	19921002		

PRIORITY APPLN. INFO.: JP 1987-151057 198706 19
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AB The articles, containing crystalline granules of α-Sialon Mx(Si,Al)12(O,N)16 (M = Li, Mg, Ca, Y, or lanthanide metal other than La and Ce, 0 < x ≤ 2), crystalline needles of β-Sialon Si6-zAlzOzN6-z (0 < z ≤ 4.2), and a M-containing glass phase, are prepared by mixing raw α-Sialon powder, according to the above formula and containing <8% excess O, with Si3N4 powder, and sintering the mixture at 1600-1900° in a N-containing atmospheric These articles

have high fracture toughness and high high-temperature strength, and are useful as wear- and heat-resistant material for cutting chips, rolls, etc.

IT **124164-55-2P**
RL: PREP (Preparation)
(α-Sialon, ceramics containing crystalline needles of β-Sialon and crystalline granules of, manufacture of)

RN 124164-55-2 HCAPLUS

CN Aluminum lithium silicon nitride oxide silicate ((Al,Si)12Li0-2(N,O)16(Si2O5))0-3.2) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O5Si2	0 - 3.2	20328-07-8
N	0 - 16	17778-88-0
O	0 - 16	17778-80-2
Si	0 - 12	7440-21-3
Li	0 - 2	7439-93-2
Al	0 - 12	7429-90-5

IC ICM C04B035-58

CC 57-2 (Ceramics)

IT 122989-49-5P, Aluminum silicon yttrium nitride oxide ((Al,Si)12Y0-2(N,O)16) **124164-55-2P** 124164-56-3P 124182-31-6P
RL: PREP (Preparation)
(α-Sialon, ceramics containing crystalline needles of β-Sialon and crystalline granules of, manufacture of)

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